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THE cordial welcome and hospitable reception of the American Engineers in England, though only what was anticipated at the hands of our cousins, has been most gratifying, and though it is impossible for us to record all the details of their interesting receptions, we cannot refrain from referring to the graceful address of the Right Honorable ARTHUR WELLESLEY PEEL, Speaker of the House of Commons, at Leamington, in which he acknowledged, in the name of the English people, their admiration for the great feats performed by American engineers, and with such evident cordiality and sincerity that the value of the expressions of good-will is largely enhanced. At the banquet at the Guildhall in London, on Thursday evening, the expression of our Minister, Mr. LINCOLN, in returning thanks for the toast to America, proposed by Sir JOHN COODE, President of the Institute of Civil Engineers, was a very happy one—viz., that engineering surpassed diplomacy in cementing the unity of nations.

STEAMSHIP SPEED.

Just when the five-day mark may be reached by the transatlantic racers cannot be foreseen, and in view of the startling progress made very recently in high speeds, it would be a wild guess to predict what record will be made in any given future period. But we imagine that the limit will be set rather by the passengers than by the steamship companies, naval designers or engine builders. If the traveling public continue to demand excessive speed, and are willing to pay for the saving of a few hours' time, together with the attendant racing excitement—and inevitable risks—the companies will be forced to keep up the competition and to cater to that demand. The length of vessels, docking facilities, power of engines, and all details, will be forced to the greatest possible development, and the ships will be driven to their utmost. The legitimate gain in speed during late years has been due to increased size of vessels, twin screws, and boilers capable of standing pressures not dreamed possible a generation ago. Relative, though not actual, fuel economy has been secured mainly by the introduction of triple and now quadruple expansion engines. What may be called illegitimate gains in speed have been reached by carrying initial pressures to an extreme and driving the ships more or less recklessly. The dangers of racing are not confined to a few unfortunate fishermen off the banks and to the other vessels which may haplessly be cut down at anchor or under weigh in foggy weather; they affect the racing passengers as well.

Possibly there may be a reaction against the desire for great speed, or at least against speed attained only by taking unnecessary risks. If so, the steamship lines will devote attention rather to increased economy, safety, regularity of passage, and comfort, than to speed: and if this assumption should turn out to be correct, it is quite possible that after the present crack racers and those now under contract have settled their rivalries, no further increase in speed may be looked for during a considerable period, or even that a retrogression of records might set in for a time, though we confess we have little expectation of seeing it.

We have seen the same thing in the history of the sailing merchant marine. When great speed was for a while profitable, as in the California trade and in the competition over the early tea crop, ships were built and handled to meet the demand. But extreme clipper models are things of the past, partly owing to the competing steam carriers and partly to transcontinental railroads, but mainly because of the excessive first cost, relatively low carrying capacity resulting from the fine hollow lines, large crews, danger from "carrying on" and expensive rigging repairs. The great sailing records made in the early "fifties" by the clipper fleet, the "Flying Cloud," "Red Jacket," "Dreadnaught," "Sovereign of the Seas" (411 knots in 24 hours, we believe), are not disputed by their humbler successors, the cargo wagons of to-day. So that here is a precedent which is not wholly inconceivable as to steamships.

Since the time of Dr. LARDNER and the famous dictum attributed to him that no vessel could carry coal enough to move her across the Atlantic, people have been diffident in expressing decided opinions regarding steam navigation. One can only wait and see.

PREVENTABLE ACCIDENTS.

In the course of the discussion upon Sir FREDERICK ABEL'S great paper on Accidents in Mines, Sir WARINGTON SMYTH remarked:

> It was sometimes stated * * * that all accidents of that kind were preventable. He very much objected to that term. The same thing might be said with regard to all the accidents of life—"If you had avoided doing such and such a thing you would not have slipped down on the pavement, you would not have been thrown from your horse, or upset in a boat." No doubt there were many colliery accidents the origin of which could be traced and reasoned upon, but it was by no means the case that they were always preventable.

There is much plausibility in this line of argument. It follows in the track of the old adage about foresight and "hindsight," and has a specious ring as of hard common sense about it, which is not a little misleading. True, there is a certain class of accidents which could be avoided by adopting some unusual precautions or simply having an alibi at the time of emergency, and which it would be unfair to class as preventable. When a person is struck by lightning the fatality can not be said to have been preventable because of a neglect to provide personal insulation, or because he was not in the next county when the bolt fell.

Probably no two engineers would agree as to what is or is not a preventable accident in each of, say, a score of actual or hypothetical cases; and, indeed, it would be impossible to draw a hard-and-fast line of demarcation as to responsibility where conditions so shade from one combination to another and merge insensibly from one degree of culpability to the next, and where opinions, even of experts, are so divided. But it is evidently safer to err on the side of enlarging the scope of application of the term "preventable" than to draw the limits too close.

If we are to look for a general test, it may perhaps be found in the consideration whether *before* any accident, of whatever kind, the risks were known, or ought to have been known, to be great. While one cannot, of course, define exactly what constitutes a "great" risk, the want of fine definition is not so important as the question of time of recognition.

Applying such a test to the recent Johnstown disaster, it will be found that danger, though not precisely the one imminent, was widely dreaded. But though the fears of a bursting of the South Fork dam were probably unfounded they should at least have called attention to other threatening dangers. It has always been an accepted engineering axiom that earthen embankments are not overflow dams, unless protected by wooden aprons or very heavy stone facing, and that in the absence of such protection they must be provided with waste weirs or culverts of sufficient capacity to meet any reasonably conceivable rise of water. From this point of view the breaking away of the embankment when once overflowed was a preventable instance. So far as public opinion was concerned, the apprehension seems to have taken a wrong direction—that is, of weakness of the dam against simple pressure; but the failure of many to profit by the warnings given on the fatal day subjected them to what was undoubtedly a "preventable" accident. As regards those in charge of the reservoir property, it would be necessary to know, if we are still to apply the test of foreknowledge, (1) whether the particular form of danger, namely the washing away of the outer face by overflow and the consequent thinning and final breakdown of the embankment, were all along plainly understood. That the peril was clearly perceived when too late to avert it, there is sufficient evidence. But, further (2), applying the extending clause of our test formula, that it "ought to have been known," the calamity must be classed under the head of "preventable."

To repeat: A preventable accident is one which happens after full knowledge of the peril was, or could have been, had in time for prevention or escape.

MINERAL PRODUCTION OF THE UNITED STATES IN 1888.

Dr. D. T. DAY, of the Division of Mining Statistics of the United States Geological Survey, has issued advance sheets of "Mineral Resources of the United States, 1888," giving the production summary for that (calendar) year. The ENGINEERING AND MINING JOURNAL published the statistics of the principal substances very shortly after the close of the year, and subsequently quoted the Geological Survey figures for a few of the items given out separately. At the time we pointed out certain discrepancies in the Survey returns which indicated that important sources of production had been unreported to that office in certain instances. For example, our copper returns, as published January 12, indicated a production of 236,000,000 pounds (a figure which subsequent returns would induce us to lower by a few million pounds) as against 230,406,581 pounds stated by the Survey February 16th. In the table quoted below the amount has been raised to 231,270,622 pounds, which is yet apparently below the truth.

The lead production is reported by the Survey at only 180,555 short tons. This figure is considerably below that obtained from direct returns to this office, and is, we believe, considerably below the actual output.

Zinc, estimated by the JOURNAL (January 12) at 57,000 tons, is accounted or in the Survey statement to the amount of 55,903 short tons.

While the figures given in the ENGINEERING AND MINING JOURNAL were based on actual returns, some items subsequent reports have shown to have been too high, but the Survey's statement shows obvious omissions in both copper and lead.

The revised figures, which will probably stand in the complete volume of "Mineral Resources," are as follows:

Metallic Products of the United States in 1888 and 1887.

	1888. Quantity.	1888. Value.	1887. Quantity.	1887. Value.
Pig iron, spot value, long tons	6,489,738	$107,000,000	6,417,148	$121,925,800
Silver, coining value, troy ounces	45,783,632	59,195,000	41,269,240	53,441,300
Gold, coining value, troy ounces	1,604,927	33,175,000	1,596,500	33,100,000
Copper, value at New York City, pounds	231,270,622	33,833,954	184,670,524	21,052,440
Lead, value at New York City, short tons	180,555	15,924,951	160,700	14,463,000
Zinc, value at New York City, short tons	55,903	5,500,855	50,340	4,782,300
Quicksilver, value at San Francisco, flasks	33,250	1,413,125	33,825	1,429,000
Nickel, value at Philadelphia, pounds	195,182	115,518	205,506	133,200
Aluminum, value at Philadelphia, pounds	19,000	65,000	... .	74,905
Antimony, value at San Francisco, short tons	100	20,000	75	15,500
Platinum, value (crude) at New York City, troy ounces	500	2,000	448	1,838
Total	.....	$256,245,403	.....	$250,419,283

Non-metallic mineral products of the United States in 1888 and 1887 (spot value).

Bituminous coal, long tons	91,106,998	$122,497,341	78,426,214	$97,939,65 6
Pennsylvania anthracite, long tons	41,624,610	89,020,483	37,578,747	84,552,181
Building stone	.....	25,500,000	.....	25,000,000
Lime, barrels	49,087,000	24 543,500	46,750,000	23,375,0.0
Petroleum, barrels	27,346,018	24,593,559	28,249,543	16,949,726
Natural gas	.....	22,662,128	.....	13,582,500
Cement, barrels	6,253,295	4,533,639	6,692,744	5,186.877
Salt, barrels	8,055,881	4,377,204	7,831,962	4,093,846
Limestone for iron flux, long tons	5,438,000	2,719,000	5,377,000	3,226,200
South Carolina phosphate rock, long tons	433,705	1,951,673	480,558	1,836,818
Zinc-white, short tons	20,000	1,600,000	18,000	1,440,000
Mineral waters, gallons sold	9,628,568	1,709,302	8,259,609	1,261,473
Borax, pounds	7,589,000	455,340	11,000,000	550.000
Gypsum, short tons	96,000	430,000	95,000	425,000
Manganese ore, long tons	25,500	255,000	34,524	333,844
Mineral paints, long tons	24,000	380 000	20,000	310,000
New Jersey marls, short tons	600,000	300,000	600,000	300,000
Pyrites, long tons	54,331	167,6?8	52,500	210,000
Flint, long tons	30,000	175,000	32,000	185,000
Mica, pounds	48,000	70,000	70,500	142,256
Corundum, short tons	589	91,620	600	108,060
Sulphur, short tons	.....	.....	3,000	100,000
Precious stones	.....	64,850	.....	88,600
Gold-quartz, souvenirs, jewelry, etc.	.....	75,000	.....	75,000
Crude barytes, long tons	20,000	110,000	15,000	75,000
Bromine, pounds	307,386	95,290	199,087	61,717
Feldspar, long tons	8,700	50,000	10,200	56,100
Chromo iron ore, long tons	1,500	20,000	3,000	40,000
Graphite, pounds	460,000	33,000	416,000	34,000
Fluorspar, short tons	6,000	30,000	5,000	20,000
Slate ground as pigment, long tons	2,500	25,000	2,000	20,000
Cobalt oxide, pounds	12,266	18,441	18,340	18,774
Novaculite, pounds	1,500,000	18.000	1,200,000	16,000
Asphaltum, short tons	53,800	331,500	4,000	16,000
Asbestos, short tons	100	3,000	150	4,500
Rutile, pounds	1,000	3,000	1,000	3,000
Total	.....	$328,914,528	.....	$281,637,062

Résumé of the values of the metallic and non-metallic mineral substances produced in the United States in 1888.

Metals	$256,245,403	$250,419,283
Mineral substances named in the foregoing table	328,914,528	281,637,062
Estimated value of mineral products unspecified	6,500,000	6,000,000
Grand total	$591,659,931	$538,056,345

In regard to the grand total of values, Dr. DAY says:

The total value of the minerals produced in 1888 was $591,659,931. It is recognized that this is the sum of the values of substances taken in various stages of manufacture, and hence not strictly comparable with each other; still it is the most valuable means for comparing the total products of different years. The result is an increase of nearly $50,000,000 beyond the value of the product in 1887. In that year nearly every mineral industry showed an increase, and hence an increased total was evident. But the fact that the increase was so very large was due to rather exceptional conditions in a few important industries, and it could not reasonably be expected that a similar combination of circumstances would result in even a larger total value for 1888. Nevertheless, the unprecedented stimulus given to the production of copper by an artificial price increased the total value of that product nearly $13,000,000, or nearly enough to offset the decline in the total value of pig iron. The other important factors in the increase were coal and the other fuels which followed the increased quantity of metals. With the anticipated decline of copper to the normal demand, a decline in the total value of the product in 1889 will not be inconsistent with the natural development of our mineral resources.

PRODUCTION OF GOLD AND SILVER IN 1888.

The annual report of Dr. J. P. KIMBALL, Director of the Mint, on the production of gold and silver in the United States for the calendar year 1888 has just been issued. This report, like previous ones published during Dr. KIMBALL's administration, is to be commended as a model of clearness and compactness. The arrangement of matter is such as to admit of ready reference, and the tabular work is as a rule in a shape to be plainly understood—a quality too often absent in statistical compilations, where the seeker after information is bewildered by the confusion of units used and the vagueness of captions. There are, however, even in this respect, a few snags for the unwary in some of the arithmetical work, as for example the slight discrepancy between the footings by states and the figures given for 1888 in the annual production table.

The omission of the mass of irresponsible, misleading and often absurd descriptive matter concerning individual prospects furnished by interested owners or scissored from the puffs of local papers, which made up the bulk of some former Mint reports, was a good move on the part of the present Director, and we are glad to note that he has adhered to his safe policy. If impartial and accurate information in detail cannot be had in Government reports, it is far better to rule out the pretense of it. We have frequently had occasion to dwell upon this point, and it is the unanimous sentiment of disinterested men.

The official and final estimate of the output during the calendar year 1888 is stated at: Gold, 1,604,841 fine ounces troy, valued at $33 175,000; silver, 45,783,632 fine ounces troy, valued at, in coining rate in standard silver dollars, $59,195,000; total, $92,370,000. In these figures, as in most of the United States gold and silver statistics, the ounces are calculated back from the values; hence while the latter are necessarily often quoted in round numbers the apparent precision of the computed ounces down to the last digit looks a little incongruous, though this is, of course, unavoidable. Coinage values, though usually adopted in current use, are subject to change, and market values are too shifting to have any value in statistical records; so that it is necessary to give weights also, as is done in all of the Mint publications.

The Mint estimates of the total domestic production are reached by adding (1) the bullion of domestic production deposited; (2) the domestic bullion exported; (3) the gold and silver contents of domestic ores, matte, base metals, etc., exported; and (4) domestic bullion reported by private refineries as having been made into bars for manufacturers and jewelers; and then deducting all traceable importations of foreign bullion, ores, etc., and duplications. In the case of silver especially the problem is a complicated one and the deductions are heavy. The checks and tests to be applied call for close scrutiny, and the final result is not altogether satisfactory from a statistical point of view, though we think that with the present careful investigation the probable error is not large. Every attempt to obtain complete returns directly from the producers has broken down, as witness the ninth and tenth censuses and former efforts of Mint directors. Probably the next census, also, after attempting direct, itemized collection of data, will have to fall back upon the figures of the Mint, Custom House, and the express companies to make up deficiencies, after applying a vast deal of labor and money in trying to obtain full returns from the mines. The lump method, then, has hitherto proved the cheaper and more expeditious way of reaching an approximation to the truth. In the absence of uniform and thorough governmental mine inspection over the whole country, with reports made compulsory—a state of things not to be anticipated in the United States—the collection of the gold and silver statistics direct will always be difficult and uncertain. The official figures of the Mint bureau since 1880 are as follows:

PRODUCTION OF GOLD AND SILVER (COINING VALUES) IN THE UNITED STATES—1880-1888 INCLUSIVE.

Year.	Gold.	Silver.	Total.
1880	$36,000,000	$39,200,000	$75,200,000
1881	34,700,000	43,000,000	77,700,000
1882	32,500,000	46,800,000	79,300,000
1883	30,000,000	46,200,000	76,200,000
1884	30,800,000	48,800,000	79,600,000
1885	31,800,000	51,600,000	83,400,000
1886	35,000,000	51,000,000	86,000 000
1887	33,000,000	53,357,000	86,357,000
1888	33,175,000	59,195,000	92,370,000

But while the lump method gives a fair idea of the whole output of the country, tracing its sources according to States and Territories is more difficult. Yet it is very desirable to know just where the precious metals come from, or at least from what principal geographical divisions. In the following table the Director of the Mint segregates the items, using as a check a "trial table," compiled from the direct estimates, by States and Territories, of officers and agents of the bureau. In some in-

stances these direct estimates are incorporated without change, and the discrepancies are generally not large.

PRODUCTION OF GOLD AND SILVER (COINING VALUES) IN THE UNITED STATES IN 1888, BY STATES AND TERRITORIES.

State or territory.	Gold.	Silver.	Total.
Alaska	$850,000	$3,000	$853,000
Arizona	871,500	3,000,000	3,871,500
California	12,750,000	1,400,000	14,150,000
Colorado	3,758,000	19,000,030	22,758,000
Dakota	2,600,000	100,000	2,700,000
Georgia	104,000	500	104,500
Idaho	2,400,000	3,000,000	5,400,000
Michigan	42,000	84,000	126,000
Montana	4,200,000	17,0.0,000	21,200,000
Nevada	3,525,000	7,000,000	10,525,000
New Mexico	602,000	1,200,000	1,802,000
North Carolina	136,000	3,500	139,500
Oregon	825,000	15,000	840,000
South Carolina	39,000	200	39,200
Utah	290,000	',000,000	7,290,000
Washington	145,000	100,000	245,000
Texas	.....	300,000	300,000
Alabama, Maryland, Tennessee, Virginia, Vermont and Wyoming	30,000	500	30,500
Total	$33,167,500	$59,206,700	$92,374,200

Dr. KIMBALL has compiled from various sources the statistics of the world's production of gold and silver. The latest complete figures are for 1887. We append the detailed statement for that year, given according to countries, which will exhibit the prominence of the United States as a producer of the precious metals.

WORLD'S PRODUCTION OF GOLD AND SILVER (U. S. COINING VALUES)—1884-1887, INCLUSIVE.

Years.	Gold.	Silver.	Total.
1884	$99,432,795	$95,832,084	$195,264,879
1885	95,757,582	126,764,574	222,522,156
1886	94,642,070	124,854,101	219,496,171
1887	124,992,465	163,411,397	288,403 862

THE WORLD'S PRODUCTION OF GOLD AND SILVER (U. S. COINING VALUES) BY COUNTRIES, IN 1887.

Countries.	Gold.	Silver.	Total.
United States	$33,000,000	$53,357,000	$86,357,000
Australasia	27,327,600	265,900	27,594,500
Mexico	824,000	37,570,000	38,394,000
Russia	20,092,000	562,000	20,654,000
Germany	1,496,000	994,500	2,490,500
Austria-Hungary	1,247,450	2,218,900	3,466,350
Sweden	55,550	242,250	297,800
Norway	.....	299,000	299,000
Italy	129,600	1,406,350	1,535,950
Spain	.....	2,258,000	2,258,000
Turkey	7,000	55,000	62,000
France	.....	1,944,550	1,944,550
Great Britain	1,000	414,100	415,100
Canada	1,369,700	451,550	1,821,250
Argentine Republic	30,000	30,000	60,000
Colombia	3,000,000	1,000,000	4,000,000
Bolivia	72,000	10,000,000	10 072,000
Chile	1,591,400	8,537,350	10,128,750
Brazil	998,000	5,850	1,003,850
Venezuela	3,336,000	.....	3,336,000
Peru	113,000	2,067,650	2,180,650
Costa Rica	87,000	.....	87,000
Honduras	.....	74,750	74,750
Salvador	66,400	240,000	306,400
Japan	375,000	1,332,650	1,707,650
Africa	1,919,600	17,960	1,937,560
China (Amoor district)	3,368,500	.....	3,368,500
India (British)	320,000	.....	320,000
Total	$100,826,800	$125,346,310	$226,173,110

THE MEXICAN SILVER-LEAD ORE QUESTION.

In another column we publish a translation of an article from the *Economista Mexicano* on this subject, which is well worth careful consideration. It emphasises a point to which we have drawn attention as to the general policy of any alteration of the existing regulations for the admission, free of duty, of silver-lead ores, looking at it from the broad ground of national interests, and putting aside all personal interests whether for or against the continued free importation of such ores. This article is one for our statesmen to fully weigh the meaning of, proceeding as it does from a paper which has a semi-official character, edited by Señor MANUEL ZAPOTA VERA, a gentleman who not only fairly expresses the intelligent opinion of Mexico, but who occupies the position of Under Secretary of State for Foreign Affairs, and represents no doubt the views of Señor MARISCAL, the Secretary of State for Foreign Affairs, and those of the rest of the the cabinet of President DIAZ.

The warning contained in the article seems to us a serious one, and not only points to a natural loss of commercial intercourse between the United States and Mexico, if the traffic in ore is forbidden, but hints plainly at retaliation. This would be of little importance if coming from an ordinary newspaper source, but we cannot count it as such in the light of the facts we have above stated.

It seems to us scarcely possible that the Secretary of the Treasury will yield, without a longer and more careful examination, to the appeal to reverse the long-continued and repeatedly confirmed ruling, including the unanimous vote of the Judiciary Committee of the United States Senate. We also fail to see how it can be logically contended that the ores imported from Mexico, whatever they contain of lead, are not fairly and truly "ores of silver." The longer we consider the subject the more we think that it ought not to be disposed of without some regard to the interests of American miners, whose silver ores are not rich in lead, and therefore not valuable for fluxing, but need lead-bearing ores for their reduction. Looking at it from the legal point of view, as the tariff expressly puts "ores of silver" on the free list, it will not greatly help the claimants for a reversal even if they show that besides being "ores of silver" the ores are likewise "lead ores." If the same import be in the free schedule under one name, and in some prior and dutiable schedule under another name, the law seems to be well settled that it will be deemed to be free. These, however, are matters for lawyers, and for those who have to determine how much the government should respect the manufacturing industries which have been built up on the faith of long-continued rulings. We are now more interested in a practical question which we sincerely hope will not be overlooked at Washington.

No one familiar with the recent history of mining in this country can doubt that the establishment and growth of the great smelting works at St. Louis, Kansas City, El Paso, Socorro, Pueblo, Newark, and elsewhere, which are in a large measure dependent upon the fluxing ores of Mexico, have been of enormous benefit to the general silver mining industry of the United States. They have introduced into the market wealthy and important competitors for ores; and as the result of the competition it has become profitable to mine many ores which previous to the establishment of these new smelters would not have been mined: and the same competition has also tended materially to raise the price of many ores which were previously mined with but slender profit.

Apart from this question of competition, every sensible miner of ore containing little or no lead knows that the value to him is reduced with increase of expense in smelting. The values of the carbonate ores produced near Leadville have been enormously enhanced because it was found that by their aid dry ores could be profitably smelted, which, without the carbonates, it would not have paid to take out of the ground.

The carbonate ores have, therefore, acquired a separate and special value, and have become a means of smelting, exactly the same as the fuel, limestone, iron ore, etc. The miner has to pay the expense of such fuel, etc., in the cost of smelting, and so also must he pay the special cost of the carbonate ores whose value lies in their fluxing qualities and not in their intrinsic worth of silver and lead. To enormously increase the cost of the carbonate ores, as it is proposed to do, by shutting out the supply of similar ores from Mexico, is simply to levy a tax on a large portion of the general silver mining industry of the United States for the benefit of a very small fraction of that industry which is fortunate enough to possess ores of this description. We know it is no exaggeration to state that if Mexican ores are excluded, a considerable number of dry ore producing mines will have to cease working. When this is fully realized, upon a fuller consideration of the facts, we have no doubt that many of those hitherto in favor of the exclusion, will change their views, and wish matters left as they are.

Taking a comprehensive view of American interests, it seems to us that mining and smelting must rise or fall together. The miners find it hard to make money with the difficulties they have even now to contend with, but they will fare worse if deprived of the smelting competition which the supply of fluxing ores has given them. To destroy one-half or more of the American smelting industry, or to compel it to cross the Rio Grande and carry on its operations in Mexico, would be a serious blow at one of our greatest and most creditable industries, and perhaps nearly as serious a blow at the mining industry of several important districts. The lead-producing industry of the United States is important, but it amounts in value to scarcely one third that of the silver production, and it would hardly be a consistent and sensible course if the government, in order to check competition in one direction, were to injure manufacturing and mining industries of far greater importance by doing so. There should be a harmonious building up of all our industries, and where an import of raw material directly and distinctly stimulates and supports them, true protectionists would naturally demand its admission and not its exclusion.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

All letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Lixiviation.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: I have read with much interest the correspondence which has appeared in your columns on lixiviation.

When such high authorities as Messrs. Ottakar Hofmann, Daggett and Aaron agree to differ there appears little help for us poor unfortunates, who have put the little money we have made in our businesses into mines.

We do not pretend to be competent judges to unravel the various intricacies of sulphates, sulphites, and sulphides and other chemical technicalities.

What we desire to know is, which is the most satisfactory process to adopt to pay us dividends.

An ounce of practice is worth a ton of theory.

A gentleman who visited Cusi last autumn told me that they had abandoned the use of the Russell process.

I observe in your issue just to hand that the Cusi Company is reported to have made a profit this year. I understand they did not do so last year when operating under the Russell process. This looks very much as if something was wanting in that process. Is it not probable that it may suit some ores and not others? Can any one throw any light on the subject? I am, sir, yours obediently, L. M.

LONDON, England.

THE BUCHANAN MAGNETIC ORE SEPARATOR.

In our issue of March 10th, 1883, we illustrated this machine as originally designed. The accompanying cuts illustrate the separator as now built and improved. The machine may briefly be described as two revolving rolls or electro-magnets of opposite polarity, receiving their magnetic force from two stationary electro-magnets of the "horseshoe" type, in which the rolls revolve in suitable journals. The electro-magnets are wound with insulated copper wire in such a manner that when a current of electricity is passed through the wire, the terminals of each magnet will be respectively of north and south polarity; the revolving rolls are charged by induction, and the magnets are so arranged that one roll-shaft passes through both of the north terminals of the magnets, and the other roll-shaft through both ends of the south terminals of magnets. By making one roll north and the other south a powerful magnetic field is formed between them, exerting the greatest magnetic force at a point where the surfaces of the rolls are nearest together, and gradually diminishing in power until at a point nearly opposite, where the rolls are practically non-magnetic. The magnets and rolls are mounted on a substantial wooden frame, which also supports suitable hoppers for feeding the ore on the rolls and chutes for conveying the concentrates and tailings from the separator, and also the adjusting gear for regulating the distance between rolls.

Referring to cuts, Fig. 1 is a side elevation, Fig. 2 an end view. *A A* represent the two rolls, which are provided with brass collars at their ends to prevent the ore from dropping over the edge. The rolls have heavy wrought iron shafts running through them, which revolve in the journals or magnets *B*, and receive the wooden driving pulleys *M M*. The rolls are hollow, having an elliptical core placed so that the metal is heavier at the ends of the rolls nearest the magnet than it is in the centre. This curve is so proportioned that the entire face of the roll is uniformly magnetic. The electro-magnets *B B* are of soft cast iron, are carefully insulated and wound with insulated copper wire. One of the magnets on each side is made adjustable by means of the trunnion or pin *G*, on which the magnet oscillates. The adjustment of the roll and magnet is effected by means of the hand wheel *I*, screw *H*, and swinging cross-bar *J*, which is connected to magnets by two brass links, shown in Fig. 1. *E* represents the hoppers supported by the frame *F*; the ore is fed into this hopper either by a chute or an elevator, and the flow of ore on the rolls is regulated by the handles *R R*, which are attached to brass rolls having about one third of their section cut out to the center and so arranged that the edge will strike the sides of the hopper and cut off the flow of the ore; or, if the handle *R* is turned in the opposite direction, an opening will be made through which the ore flows upon the adjustable inclined chutes *N* on the rolls. The feed can be regulated to suit the requirements of any magnetic ore. The chutes *C C* are for the concentrates and are made adjustable by means of the links *U U* and *O O*. *D* is the chute for the tailings, the upper end of which is of brass and is made adjustable, so that when the movable roll is drawn back the mouth of the chute can follow it, a portion of it being hinged on a pin and held by a hand wheel and set screw, as shown at *P*, Fig. 1. The operation of the machine is as follows: The ends of the magnet wires are "connected up" to a suitable dynamo machine, designed and proportioned for the purpose. The rolls are rotated toward each other by means of the wooden pulleys *M M* at a surface speed of about 150 feet per minute, and the ore is fed into the hoppers to the rolls. By the peculiar arrangement of the magnets a very strong magnetic field is formed between the rolls, while the surfaces of the rolls on the opposite side are practically non-magnetic. The ore falls upon the top of the rolls, where they have very little magnetic power, the gangue, or rock, rebounds from the rolls or is thrown off by centrifugal force, and being then acted upon by gravity alone, falls directly through the rolls into the tailing chute *D*. The ore is drawn into the magnetic field and attaches itself to the surface of the rolls, and is carried around to a point beyond the tailing chute, until it reaches a point where the magnetic force becomes so weak that the ore falls off into the chutes *C C*. The peculiar effect and the magnetic field produced are illustrated by Fig. 3; the magnetism is indicated by the curved dotted lines representing the lines of magnetic force. It is evident that by means of this gradually diminishing magnetic power, that several grades of concentrates can be obtained. As the richest will adhere longer to the rolls and be carried farther around, and pieces having gangue attached will drop off first by simply placing partitions in the chutes, this grading can be accomplished. This machine, owing to its immense magnetic power, can be used for "cobbing" at the mines, and is much cheaper and more reliable than hand-sorting. The rolls will treat ore up to three inches, and larger if required. This separator is very simple and strong, and cannot well get out of order, as there are no light parts about it, and no electrical adjustments to get out of order; there are no gear wheels or wearing parts, except the journals. For electrical reasons these are made so large and long, and the duty is so light upon them, that the wear would not be measurable in years of constant work. The machine is adjustable in every part, and can be regulated to work on any concentrating ore, provided, of course, that it is magnetic.

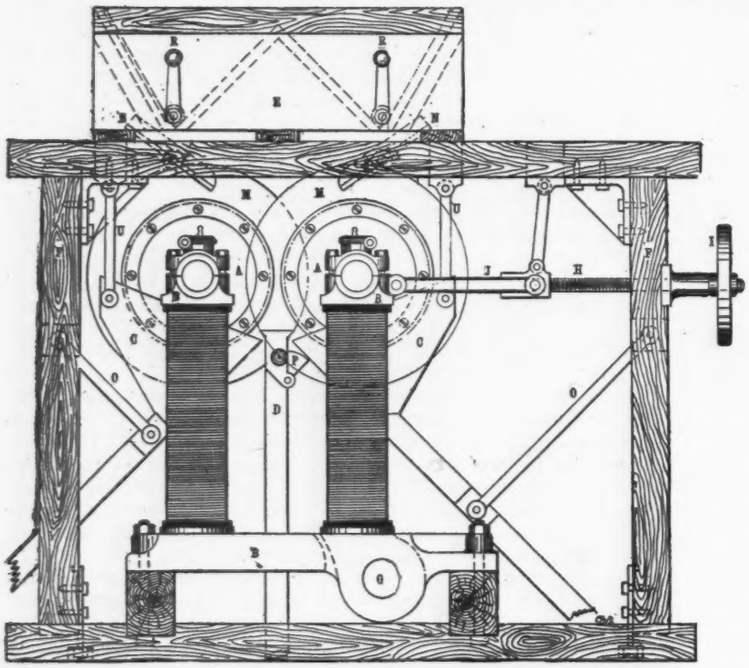


FIG. 1. BUCHANAN MAGNETIC ORE SEPARATOR.

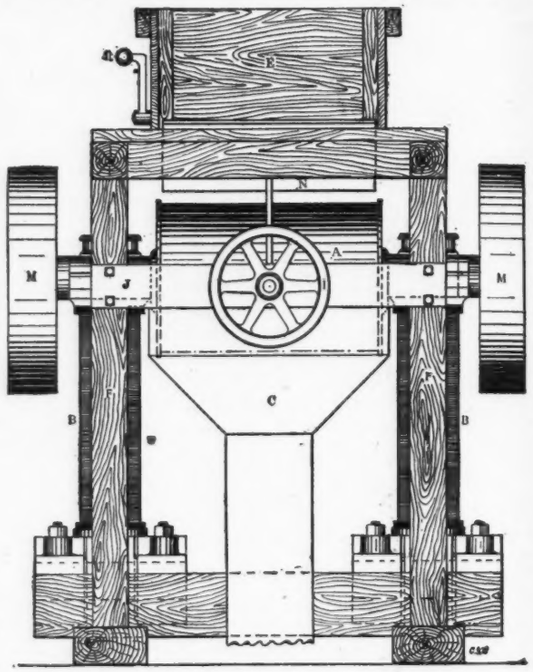
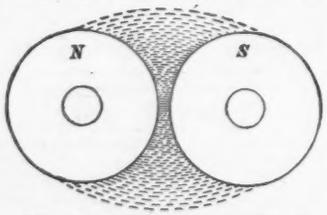


FIG. 2.



BUCHANAN SEPARATOR.—FIG. 3.

It is built by the Beckett Foundry and Machine Company. A special plant has been erected at the company's works for testing the capabilities of the machine on various ores, consisting of a separate steam engine, crusher, rolls, screws, separator and dynamo machine. Mr. C. G. Buchanan is the consulting engineer to the Beckett Foundry and Machine Company, of Arlington, N. J., and 120 Liberty street, New York.

Detection of Antimony in Minerals.—A. Johnstone recommends the adding of a drop of ammonium sulphide to the white incrustation of Sb_2O_3, obtained by heating an antimoniferous mineral with fusion mixture on charcoal in the inner flame of the blowpipe; the very characteristic reddish or orange sulphide of antimony is produced. With larger quantities the reaction may be obtained by heating in an open tube.—*Chem. News*, 58, 296.

MEXICAN VIEW OF THE LEAD ORE TARIFF QUESTION.

Under the title of "A Menace to the Mining Industry" we find the following article in *El Economista Mexicano*, a journal not only ably written, but which has a semi-official character. "It is well known that, aided by the facilities of transportation furnished by the railroads, and the freedom from import duties, the low-grade ores have been exported across the frontier for treatment in the United States, where several very important smelting concerns, established for the very purpose since the commencement of this new business, are carried on, relying on the Mexican production. These facilities have resulted in so large a movement, that in 1888 there were exported through El Paso 70,922 tons of ore, from which were extracted 20,973 tons of lead. This wonderful development has taken place in eight years, and would promise to go on increasing if the conditions which gave rise to it were maintained.

"It appears, however, that the Treasury Department of the United States, which has been in the habit of admitting free of duty the importation of ore so long as the lead value was inferior to that of the silver contained, is considering the question of altering this regulation, and of applying the same criterion as is customary with ore containing copper—viz., charging duty, no matter how insignificant the proportion of metal in question may be. The carrying into effect of this measure, which has the support of the Senate committee on mining, means the paralysis of this exportation into the United States, as it cannot stand the payment of 1½ cents per pound on the lead contained in the ores exported.

"We shall not deny that this determination would be injurious to various interests in our country, at least for some time, while the current of export is seeking other channels, which in all probability would be directed to Germany, already importing ore from Mexico, and where are situated perhaps the most important smelting establishments in the world. But the interests most injured would doubtless be the railroads engaged in the transportation of these ores, constructed with American capital, and the smelting establishments already referred to, built at great cost, also with American capital.

"The direct injury to us would consist in the loss of time in placing on a normal basis the new traffic, and the result in smaller profits, owing to the greater distance the ore would have to travel; but in all probability, neither the working of the mines nor the exportation of the ores would cease on that account, or be injured so much as the railroads which would lose the traffic, or at least a considerable portion of it, and the smelting establisments which would be closed for want of material, or would have to be moved into Mexico; losses all much more pronounced for American interests.

"Besides, it is very natural to suppose that so soon as this importation ceases, the price of lead, cheapened to-day by the Mexican surplus productions, under favorable conditions will advance and will occasion a diminution of consumption, and, consequently, a subsequent lowering of values, and no increase will have been obtained in local production, while other interests created through existing advantages will be injured.

"These considerations cause us to hope that the suppression of the exportation of Mexican ore to the neighboring Republic will not be persisted in (for the duty referred to would be equivalent to suppression); but if other interests predominate, and carry their point, we must deplore the fact that while in Mexico everything is being done to foster commercial relations with the United States by means of concessions and other efficacious measures, the very opposite ideas prevail in the United States.

"It will not be the fault of Mexico, consequently, if in the course of time her commerce is diverted to other countries, as it is but natural that she should build up and encourage mercantile relations with those nations which show her good will and reciprocal intentions."

THE GEOLOGICAL SURVEY OF INDIA.

From the Annual Report of the Geological Survey of India, for the year 1888, we find that the investigation of the Madras diamond-fields has apparently failed to discover the existence of a parent rock which would account for the presence of such stones. The fact, however, remains that diamonds are found in the surface soils and gravels of Wajra Karur and at other places in the Bellary District; and it has been stated, but not authoritatively, that some of these diamonds have been found in a "neck" of igneous rock occurring among the gneisses, which bears some resemblance to the Kimberlite of the Cape diamond fields. It is believed that diamonds occur only as part and parcel of the superficial debris, having been derived from a long-disappeared upper portion of the same "neck" rock which had passed through some carbonaceous deposit, which in past ages has been worn off the face of the country.

The Madras gold-bearing rocks have been examined with the most gratifying results. The area over which these bands of transition rocks occur in Southern India is enormous, stretching in a more or less north-north-west, south-south-east direction, from about the 17th to beyond the 13th parallel of north latitude, and distributed over a breadth of 192 miles. If we may place any reliance upon the geological relations of the series, and on the ancient workings, the conclusion that gold-fields of uncommon richness are still lying fallow, seems almost inevitable, and the progress of the gold industry in the Madras Presidency, would seem to be assured.

The exploitation of the Singareni coal-fields gives room for hope of extensive mining operations in this district in the immediate future, and the quantity of coal available has been estimated to be 17,000,000 tons. Its area is considered to be greater than that of the Umaria estate and the Karbarbari field, while its good steaming qualities, low cost of cutting, winding and loading and freedom from competition should assure its economic success in a marked degree.

The manganiferous deposits at Gosalpur and other places in the Jubbulpore District were examined, and the total quantity of pyrolusite (manganese ore) at Gosalpur estimated at about 50,000 tons, while from the Sihora tract and other neighboring localities about 26,000 tons may be reckoned on.

In the Bengal Presidency renewed search for materials required for the increased development of the iron industry has been made at the Barakar Works, and has resulted in the discovery of pure limestone in ample quantity; and some stores of coal were incidentally discovered.

An attempt is being made by the Bengal Government to ascertain the capabilities of one of the coal fields of the Rajmahal hills, which, if successful, should prove a most convenient source of supply for the deltaic system of railways. A previous attempt was made on the eastern edge of these hills near the town of Rajmahal itself, but the matter fell through before the boring had been carried down to the depth intended. Sites for new borings on the western side of the hills have now been selected, and the results of the present exploitation will be awaited with interest.

At Khost, on the Sind-Pishin Railway, coal workings have been in progress for some time, and the fuel has been landed by coolies at the station at a sufficiently low rate to satisfy the Northwestern Railway administration. At present the coal is obtained by surface digging or by driving galleries along the seam at a short distance inside the outcrop, but in order to work the seam upon a larger scale it would be necessary to run an incline adit down on the dip of the coal as far as it could be conveniently carried, from the bottom of which horizontal drifts should be run with the seam on either side, the seam being worked out upward toward the outcrop.

In the neighborhood of Sharigh, what is believed to be the same series of beds as at Khost, with probably the same seam of coal, are found, and as they lie horizontally, the conditions of working would offer greater facilities than at Khost.

It appears that the exploitation of the coal measures of Baluchistan is beset with conditions which cast some doubt upon the possibility of a profitable industry being established there in the immediate future.

The utilization of petroleum might compensate for the disadvantages under which the coal measures of Baluchistan labor; but there are difficulties to be faced. In the case of Khatan, where oil has been brought to the surface, the difficulties of transport strongly militate against the successful employment of the oil as fuel. The oil fields are forty miles distant from the railway, and as the oil is too thick to flow any distance, it will have to be carried over this distance before it can be made use of. The locality of the oil works is without supplies of any kind, or even drinkable water, and is as badly situated as a place can well be for the center of an important industry. Some oil operations are reported to have been begun in the neighborhood of Shoran, and, owing to its greater accessibility, it may become the scene of a future industry. The quality of the Baluchistan oil, like that of Assam, is not equal to the oil of the Rawalpindi district, but the latter is handicapped by the conditions of working, which would entail deep boring and pumping, whereas in the former cases oil-shows are found on the surface.

The oil-region of Makum, in Assam, has undergone additional examination, and the oil-shows of this tract are most favorable. A certain amount of caution must, however, be observed in forming an estimate of the value of the oil, as the results obtained in the Geological Survey Laboratory agree very closely with those already given by Prof. Boverton Redwood from an assay of petroleum from Assam, where he obtained no percentage of burning oil, 94·2 per cent being merely lubricating oil.

The former sample was obtained at the surface from a natural oil spring, and, the illuminating value of the crude oil can only be ascertained from samples taken from the oil measures below the surface which have not been exposed to atmospheric influences, and until petroleum from below has been examined, it would be unwise to pronounce a judgment based upon the results of the analysis given.

In Burma several investigations of economic products have been made, notably the oil fields of Youang-Young, Thayetmu and other places; iron ore in the Shan Hills; and the ruby-bearing limestone tracts of Maddya and Kya-uhyat; while attention is also being directed to the tin ores of Tenasserim.—*The Indian Engineer.*

THE CASTING OF A BRONZE PANEL.

Through the courtesy of Mr. E. F. Aucaigne, the general superintendent of the Henry-Bonnard Bronze Company, of this city, we were permitted to see the casting of the panel designed by Mr. James E. Kelly for the monument to be erected at Gettysburg in honor of Gen. Thomas C. Devin by the 6th New York cavalry regiment, commanded by him at that great battle.

This panel, the largest ever cast by the bronze company, viz., 5 feet 9 inches by 6 feet 4 inches, represents a cavalry charge. The brave leader, mounted on a noble horse, stands out in the foreground, while on either side he is surrounded by troopers in various attitudes. A striking incident is depicted on the right side of the panel —the color-bearer wounded, evidently mortally so, is trying to rally his strength sufficiently to pass the stars and stripes to his immediate neighbor, into whose hands they fall rather than are handed. On the left of the line is the bugler, whose boyish cheek is distended to its utmost while he blows his call. The design is one of great strength and power, and will add to the reputation of the artist, whose first important work in sculpture was his famous "Sheridan's Ride."

The process of casting is an interesting one. The plaster model comes from the artist to the foundry and sand molds are made of it, a positive and a negative, which require considerable time for their preparation, as not only must they be exact reproductions, but they have to be kept for some time in a drying room at a temperature of 2200 degrees F. in order to thoroughly expel all moisture. After the molds have thoroughly cooled down they are placed in a cradle in which they are held while the metal is being poured. In the case of the panel referred to, the composition used was about 90 parts copper and 10 parts of tin, some zinc was added originally, but by the time the casting took place the zinc had been nearly all volatilized. Some 1800 pounds of metal were put into the crucibles, which were of plumbago, and the melting, in order that the metal may be thoroughly homogeneous, required about twelve hours.

When the time for casting arrives, the crucibles, one by one, are

hoisted from the furnaces and their contents poured into a large vessel. As the liquid metal flows from the crucible its composition is shown by the green flame of the escaping vapors of copper and the blue of the zinc, lighting up the foundry in a brilliant manner. As the hour of casting was late in the afternoon, and the foundry being somewhat dark, the brilliant-hued gases produced a most pleasing effect. As soon as the metal was all poured into the large pot it was hoisted by a crane and held over the cradle containing the moulds. Then it was poured. This is the most critical moment of the entire operation, for it is necessary to have the bronze at an exact temperature to insure a perfect flow. Too high or too low a temperature would ruin the casting. The work of months is now but a question of seconds. At the proper moment the foreman gives the order, and the contents of the crucibles are poured into the reservoir on the top of the cradle. A moment more and the plug in the bottom of this is withdrawn, a quick rush of air is heard for an instant, the play of colors is seen, and the metal enters the mold. Pouring is continued until the metal flows out at the overflow openings at the side, when it is known that the casting is complete. All of this is but the work of a few moments, and by the time the spectator catches his breath the operation is all over.

The cooling, which requires about two days, ensues, and then the casting is dug out of the cradle, dipped in acid and passed to the finishers, who file away all inequalities and make good whatever imperfections may have occurred in the casting process. According to the size of the work it takes a week or more.

The panel which we have described was cast on June 5 and must be in Gettysburg in time to be unveiled at the anniversary of the great battle on July 1 to 3 of this year.

TREATMENT OF QUICKSILVER ORE FINES AT ALMADEN, SPAIN.*

For the treatment of fines rich in quicksilver at Almaden, the size of which does not exceed 10 cubic centimeters; channel furnaces, *hornos de canales*, are employed, which have the great advantage of being continuous in their operation, to such an extent, that in the seven months, which was the duration of the last campaign not the slightest interruption occurred. Without going into the history of the modifications which these furnaces have passed through, modifications easy to be understood by any one who is acquainted with the difficulties to be encountered by the management, we cannot do less than name the two distinguished engineers, Messrs. Oyarzabal and Madariaga, whose labors for a most important improvement in the reduction of the Almaden fines would have been better rewarded in any other country.

There are in the establishment two of these furnaces, and it will be sufficient to describe one of them, as the only difference between them is that No. 1 admits fines up to 10 cubic centimeters, while No. 2 does not take a larger size than 2 cubic centimeters.

The hearth is an inclined plane constructed of fire-brick, 2·50 meters in width by about 8 meters in length, the grade of which is equal to or a little steeper than the natural slope of the fines. Every 40 centimeters this floor has a rise of 2 centimeters, as can be seen in the illustration. It is divided by partitions, 30 centimeters high, into 12 channels, 12 centimeters wide, in which the ore runs; these vertical partitions are formed of fire-brick, which have the form *a*.

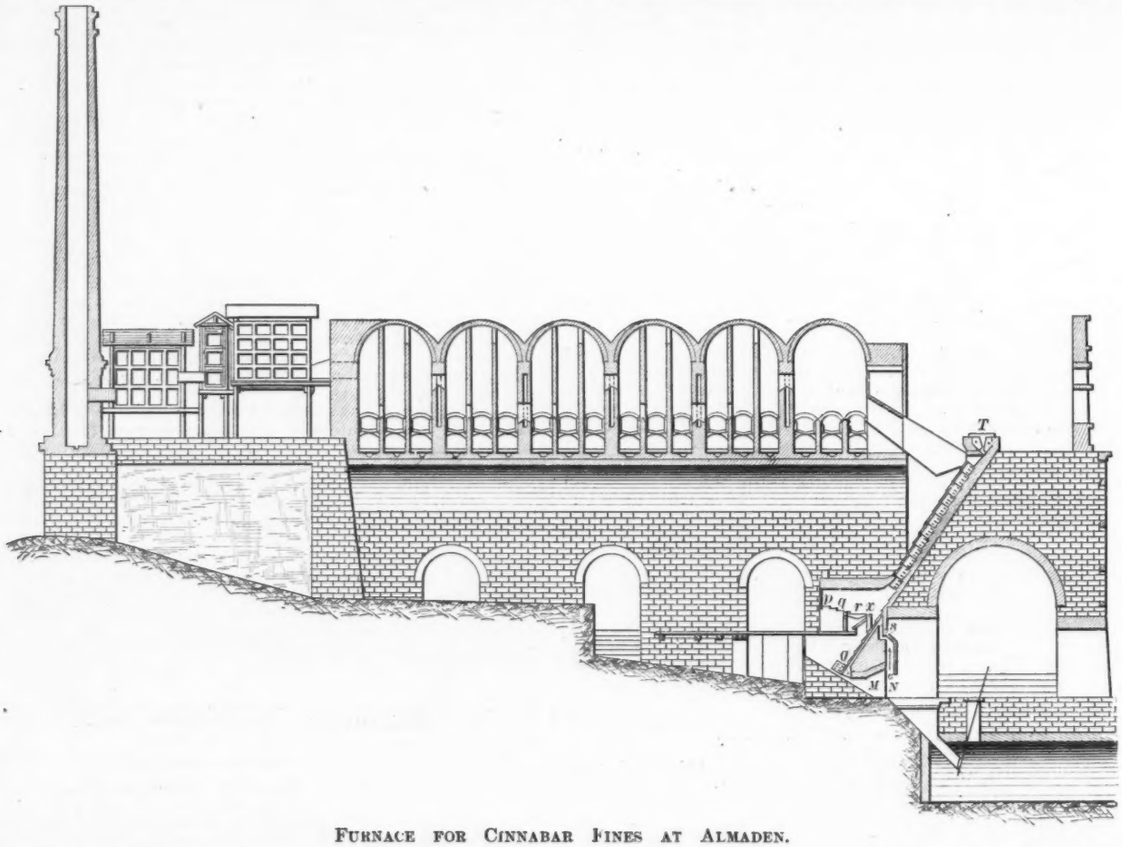
*Translated from the *Revista Minera*, of Madrid, for the ENGINEERING AND MINING JOURNAL.

Transversely in the channels and supported on their partitions, there are placed some bricks called *tacos* ("stoppers") which are above the floor of the hearth 4 centimeters, this being the thickness of ore in each channel. Arranged in the same way there are others called *petacas* ("trunks") situated immediately at the bottom of the rises and at the same distance from the hearth as the "stoppers," which serve to break up the fine ore on them so as not to present invariably the same surface to the action of the heat. On the lower part of the hearth there is another inclined plane *M*, perpendicular to it, from which, at the point where it commences, it is situated, as many centimeters as the thickness of the covering of ore; this is also divided into 13 channels, but there are no "stoppers" nor "trunks" on it.

The ore, already calcined on the first plane, travels to the second at, the end of which, *N*, a boy is placed, whose duty is to make it run over the hearth, in the manner which we will presently describe. A little above the second plane, and facing the first, but separated from it by the bridge, *x*, is placed the fire-place, the grate of which is divided into two equal parts by a partition which rises to the arched roof of the fire-place. The fire-grate is formed of two systems of bars, *p*, *q* and *r*, *s*, the first placed lengthwise and irregular in height, and the second crosswise.

The air for combustion passes in by the ash-pit to the fire-place, having traversed certain passages *e*, *f*, *g*, where its temperature has been raised by the heat taken from the walls of the furnace.

By means of the hopper *T* the channels are filled with ore, and when it has been sufficiently exposed to the heating and reducing action of the



FURNACE FOR CINNABAR FINES AT ALMADEN.

gases, the boy placed at *M* withdraws a portion of the ore placed on the lower edge of the second inclined plane. The charge descends gradually, transmitting the motion as far as the hopper, by which a new supply of ore enters, equal to that which the boy withdrew. The ore remains subjected to the action of the heat about four hours; for the charge being made at 2:30 P. M., it passes in front of the bridge at 6:40 and leaves the second plane at at 7:43 P. M., the capacity of the channel admitting 434 kilos.

The fines now calcined are ejected by a hopper to the passage *G*, whence they are taken out in cars. They do not now contain more than two to four hundredths per cent of quicksilver. The condenser is formed by two series of chambers, the first of which communicates with the furnace by a throat (*bombo*) in the shape of a truncated pyramid of iron plate protected with brick. The six chambers which constitute this first series are of brick, with thin walls, and are divided by partitions which have openings arranged for the passage of the fumes, so as to run in double zigzag.

The bottom of each division is formed of two inclined planes, whose intersection has a small incline toward a channel common to all the chambers in which is collected the quicksilver condensed in them. The bottoms are of iron plate in the three chambers nearest to the furnace, and of slate in those furthest away, this arrangement being in consequence of the iron being attacked by the quicksilver in the latter.

The last part of the condenser is formed of wooden chambers with glass, divided into four parts by vertical partitions. These chambers, like the former, are arranged so that the air can circulate below and around the sides, and allow of observation in case of any filtration of quicksilver through the bottoms.

The temperature of the fumes observed at different points is shown to be, after traveling 100 meters in the brick chambers, and those of wood and glass the lowest possible in relation to the temperature of the sur-

rounding air; consequently the condensation is effected under the best possible conditions, so that almost all of the quicksilver is deposited from the fumes in the chambers.

The two furnaces were running in the last season 197 days, 1,677,067 kilos of fines being treated in No. 1 and 1,143,983 kilos in No. 2, or at the rate of 8513 tons in the first, per 24 hours, and 5807 tons in the second. The quantity of quicksilver produced was 135,704.99 kilos in furnace No. 1 and 126,362.00 kilos in No. 2.

The fuel employed was small coal, the total amount being 151·274 tons, which at 30·7 francs a ton cost about $933.

Coke is now being substituted for coal, and it gives better results in regard to the smaller quantity of soot which is produced. In each furnace one workman and two boys are employed, the wages amounting to about $408 in the season. There are besides some chargers and cleaners who earn about $472.

The expenses of calcination were as follows :

Labor about	$881
Coal "	936
Total	$1,817

As between the two furnaces there have been produced 260,066.99 kilos, equal to 7595 flasks; the cost per (Spanish) flask is about 25 cents.

PUMPING BY ELECTRICITY IN MINES.

Many engineers in this country must have recognized that perhaps the most useful field for the employment of electric force in mining is in its substitution for steam in pumping. It is unnecessary to go into the various reasons for the desirability of this change, as they are so well known, but what we wish to call attention to at present is the apparent neglect of that branch of electrical engineering, owing no doubt to the overwhelming rush of business of other descriptions which our electrical manufacturing companies have had to meet. In England, where, we may fairly say, they are so much behind us in the general application of electricity to motive power, there has been more done than here, and with a view to advancing the subject we herewith condense the most recent technical paper on the subject, by Mr. Fred I. Rowan, C. E., in the transactions of the Mining Institute of Scotland.

Reference has already been made in these pages to the small pumping plant introduced in 1882 in the Trafalgar collieries, England, which does the work of about 1½ horse-power, and to the second set, started early in 1886, using about 2½ horse-power and working at about 800 yards from the surface, both of which continue to do excellent work and are most useful in removing small bodies of water from remote abandoned workings, but which for safety have to be kept clear of accumulations.

The third and largest plant in the same collieries started in May, 1887 and took the place of a Hathorn-Davey water-power pump, working in conjunction with a 7-inch Manchester Pearn pump, having 10-inch steam cylinders and 14-inch stroke. The electrical pump is a double plunger pump, shown in the cut 1, 9 inches diameter and 10 inches stroke, placed 2200 yards from the generator and 1650 yards from the bottom of the shaft. It has spur wheel and pinion, geared six to one, and is driven by a leather link belt, driving from a pulley 14 inches diameter on the motor shaft to a 5-foot 4-inch pulley on the spur pinion shaft. This gives 25 double strokes to the pump with the motor running at about 650 revolutions per minute; and at this speed the pump can deliver 120 gallons (imperial) per minute with 300 feet lift. This is the maximum speed of the motor, one of Elwell-Parker's 12-inch machines having an output of about 13,000 watts, or rather over 17 horse-power.

The electrical cable ultimately employed is lead covered in the shaft, where it is inclosed in wooden boxes. In the roadways it is supported upon earthenware insulators placed about 10 yards apart along the side of the road. The return cable is an old iron pit rope about 4 inches in circumference, and is fastened by staples to the props along the road. The generator, standing above ground near the top of the shaft, is also an Elwell-Parker's 12 inch dynamo—maximum speed about 950 revolutions, and output 17,000 watts. It is driven by belt from a 5 foot 11 inch pulley on the engine shaft to a 12-inch pulley on the dynamo shaft.

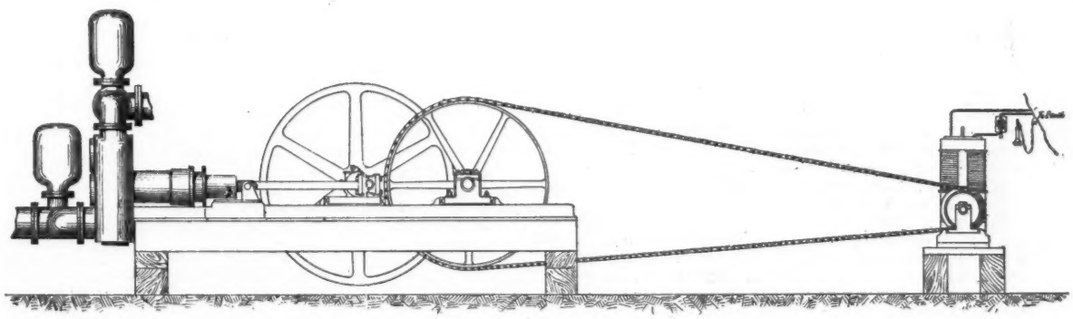
The steam engine used is an old marine engine bought at an auction, so much worn that it indicated a loss of 5 horse-power when running empty. It has a single cylinder 16 inches diameter and 12 inches stroke, using steam of 35 pounds pressure. This engine stands in the same engine-house with the engine used for driving the dynamo for the smaller pumps. The engine-house and pumps are connected by telephones and bell signals, and the necessary meters are also in the engine-room.

Observations taken by Mr. F. Brain when the pump was being driven at 25 strokes (112 gallons) per minute showed:

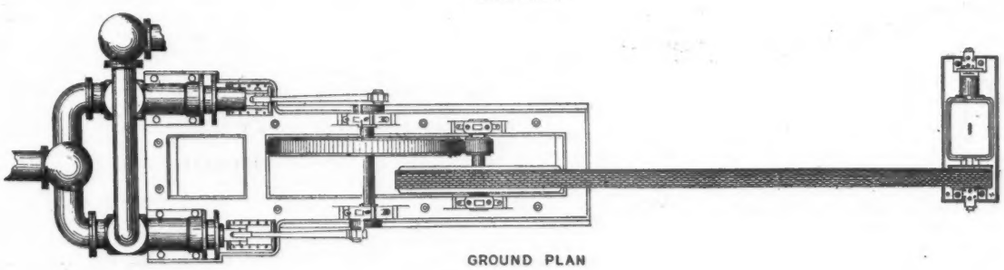
Indicated H. P. of steam engine	29·49 H. P.
Speed of generator	900 revolutions.
E. M. F. at terminals of generator	320 volts.
Current " " "	43 ampères.
Speed of motor	650 revolutions.
E. M. F. at terminals of motor	260 volts.
Current	43 ampères.
Actual H. P. of water lifted	10·36 H. P.

The following figures of first cost and cost of pumping are vouched for by Mr. Brain as accurate :

Dynamo and motor	£310
Insulated copper cable	138
Return wire iron rope	25
Signal wire	10
Insulators	6
Steam engine (estimate)	140
Sundries and fixing	15
	£644



SIDE VIEW



GROUND PLAN

ELECTRIC PUMP.

The pump (costing £130) and pipes are not included, nor is fitting up the engine or laying the mains, as these are charges common to all systems of using power. Cost of pumping 114 gallons per minute with above machinery through 1300 yards of 7-inch pipes, main rising 300 feet:

One week's pumping, 22 hours per day:	
Engineers (half time)	£1 8
Man underground (full time)	2 9
Small coal consumed (36 tons at 1s.)	1 16
Oil, waste and sundries	0 7
Interest and depreciation (15 per cent)	1 17
	£7 17

Cost per horse-power on water raised ·02 of a penny, per 1000 gallons (imperial) raised 1 80 of a penny.

Mr. Brain has stated that the cost of maintaining this electrical plant, compared with that which it supplanted, shows an economy of £470 per annum, but that this is an exceptionally favorable result, on account of the disadvantageous conditions under which the former plant was worked.

The dynamo, when not used for pumping, is switched into circuit with the motor of a ventilating fan some 1200 yards underground, placed in a return air-way, and passing about 10,000 cubic feet of air per minute.

In the latter part of 1887, Messrs. Locke & Co., of St. John's Colliery, Normanton, made trial of a small electrical pumping plant, using dynamo and motor of Immisch's manufacture, and supplying the pumps and piping themselves. Neither the steam engine nor pumps were

specially designed for use with electrical plant, but the following results show a fair commercial return of useful work :

RESULTS OF TRIALS WITH PUMPS DELIVERING 30 GALLONS PER MINUTE THROUGH A HEAD OF 530 FEET = 6·3 HORSE-POWER IN THE WATER.

Work done.	Speed of engine.	Volts on dynamo.	Average ampères given out by dynamo.	Electrical horse-power given out by dynamo.	Work done in cylinder of engine	Efficiency.	Loss in cables. Resistance 29 ohms, 800 yards of 19-16.
					Horse-power.	Per cent.	Horse-power.
Pumps delivering 30 gallons per minute.....	86	171 173·5	47·5 47·5	10·9 11	14·2	6·3 / 14·2 = 44·4	0·88
Pumps running with the suction clack lids off and the column empty	86	134 128 127	28 28 26	5 4·82 4 45	6·3	.....	·0305 ·0305 ·0265
Motor and first motion shaft only.....	88 86	111 105	20 20	2·96 2·8	4·8	.....	0·156
Dynamo only, running on open circuit...	86	.....	.....	.....	1·715	.....	.....

An old single cylinder horizontal engine was used, and was of course against the net efficiency of the system. The power required to overcome friction of engine and dynamo without any load was 1·715 horse-power. The motor ran at a speed of about 650 revolutions per minute, the pumps making eight revolutions.

The experience gained with this small plant was considered so satisfactory by Messrs. Locke & Co. that they proceeded in February, 1888, to establish electrical machinery for pumping on a large scale.

This installation was designed to raise about 7200 gallons per hour from a vertical depth of nearly 900 feet below the surface at one lift. There was a salt-water feeder giving 5100 gallons per hour, and the margin of power was provided so that the pumps should not require to work more than eighteen hours continuously. In practice, however, they have continuously worked for twenty-two hours out of each twenty-four without any hitch. The pressure on the ram faces being about 400 pounds per square inch, the pumps were specially designed, and as the experimental plant had shown that the load on the rams varied considerably at different periods of the stroke, the motor was specially arranged by Messrs. Immisch to meet the electrical conditions produced thereby.

The pumps are differential, with two 6-inch and two 4½-inch rams, and, when doing full duty, they work at 25 revolutions per minute.

The dynamo and motor are both of Immisch's design, and weigh 4 tons and 3½ tons respectively. Their weight and dimensions are arranged with a view to slow speed, cool running, and steady working, without much sparking, although meeting a variation of load amounting to 30 per cent. during every revolution of the pumps.

The speed of both dynamo and motor is 450 revolutions per minute Details of the form of pumps and of the arrangement of gearing for reducing speed have not been published as yet. The motor is, however, driven by belt and spur gearing of about 6 to 1, the pumps working at about 17 strokes per minute. The E. M. F. at the dynamo terminals is 600 volts, and at the motor terminals 575 volts. The average current is 66 ampères, but it varies with the load at least 10 ampères on either side of the mean current, and thus introduces increased heating effects, which, however, are successfully provided for in the design.

The actual horse-power represented by the water lifted is, at the rate of 120 gallons per minute lifted 900 feet, nearly 33 horse-power. The output of the dynamo being 53 horse-power, the efficiency in terms of actual useful work, compared with this output, is $\frac{33}{53}$ = 62 per cent approximately. No test of the power transmitted to the dynamo by the belt having been given, the commercial efficiency of the plant, or the ratio of useful effect to the power delivered to the dynamo, cannot be given accurately. The efficiency of the dynamo being, however, assumed to be 85 per cent, which is not a high figure, the commercial efficiency would be $\frac{53}{72\cdot5}$ = about 50 per cent. This includes all the losses in transmission; these being loss by conversion in the dynamo, loss in the cable, loss by conversion in the motor, and friction in gearing, pumps and pipes. About 2·5 horse-power are lost in the cables, and nearly 13 horse-power are absorbed in gearing and pumps and friction of water in pipes. The engineer of the colliery has stated, as the result of twelve months' working, that the useful effect obtained is over 40 per cent., so that it is evident that this estimate of the commercial efficiency is not far wrong.

A test shows the following :

Indicated power of engine, H. P. cylinder, 37·2 horse power.
L. P. " 39·4 "
76·6 H. P.

Electrical H. P. in generator, $\frac{610 \text{ V.} \times 65\cdot5 \text{ amp.}}{746}$ = 52·2 E. H. P.

H. P. at pumps—

118 Gallons, 860 feet high, $\frac{1180 \times 860}{33{,}000}$ = 30·7 H. P.

Giving a useful effect of 40 per cent.

The engine is compound, semi-portable Robey, 30 horse power, normal, indicating from 76 to 80 horse-power and working at a boiler pressure of 140 pounds per square inch. The plant cost £1600 and replaced a smaller installation driven by compressed air, which did not give 20 per cent efficiency, and the engineer of the colliery estimates that the same amount of work by compressed air would involve a first cost at least 25 per cent higher and double the engine power.

Hudson River Tunnel.—The stockholders of the Hudson Tunnel Railway Company met in London, this week, and authorized the issue of £550,000 of bonds to raise money for the purposes of the company.

NATURAL CEMENTS.

By Adolph Cluss.

Limestone, with intimate, fine-grained admixtures of silica, alumina, magnesia, etc., in quantities of 35 to 60 per cent are called cement stones. The high percentage of silicates causes a separation of the alumina from the silica during calcination at red heat just sufficient to expel the carbonic acid.

Oxides of iron and chlorides of potash are generally present in small quantities. They assist hydraulicity and crystallization. A cement of porous, friable, globular texture, with a specific gravity of about 2·7 is obtained, which contains silica and alumina in a soluble state, and hence the lime can easily act on either, according to affinity, when water is added for mixing and hydration.

The burned lumps must be pulverized before they will combine with water, when they form hydrated silicate of lime, while the alumina remains practically inert. These cements do not heat up, nor swell sensibly while they are mixed. They set quickly, but harden slowly under water without shrinking, and attain, gradually, great strength, with well-developed adhesive force. The color of these cements gives no clue to their cementitious value, since it is chiefly due to oxides of iron and manganese, which bear no relation to hydraulic properties.

To insure efficient chemical action in hardening, the grinding must be carried to the production of impalpable powders. These cements bear doses of sand of double their own volume or over. Mixing pure cements from 30 to 40 per cent of water must be added.

Many American cements of this class contain large percentages of carbonate of magnesia. The tests of strength, in pure state, as well as mixed with sand, compare well with the cements which do not contain these combinations. These cements have good adhesion to stone and bricks, because they pass with their surplus water slower than the others. Whenever judiciously selected and conscientiously manipulated, they have given full satisfaction. Many causes co-operate in affecting rocks of the compound character required for the production of hydraulic cements.

Different quarries show dissimilar stones; the best brands vary greatly in chemical composition. Fineness, density, thorough and homogeneous mixture, humidity, accessory ingredients, enter largely in the problems. To preserve the activity and strength of the natural cements for a longer time, air and moisture must be excluded by careful packing and dry storage of the barrels.

De Smeth found for our native Virginia cements in pure state, after 30 days' exposure, 170–250 pounds tensile strength per square inch, which increases in eleven months to 316–381 pounds. Mixed with equal portions of sand he obtained from 116–195 pounds, and L 80–L 90, as above.

Gilmore states the adhesion of Rosendale cement to the front bricks, after 28 days, when pure, to be 30 pounds, and mixed with one and two parts of sand, 16 and 12 pounds.

Clarke reports the tensile strength of Rosendale cements, pure :

After 1 and 12 months, as	145 to 290 pounds.
And mixed 1 : 1 after 1 and 12 months	116 to 256 "
1 : 2 after 1 and 12 months	60 to 180 "
1 : 3 after 1 and 12 months	35 to 121 "
One cubic foot of Rosendale cement weighs	49 to 50 "

The proportion of tensile to compressive strength averages probably after one month 1 : 4, and rises probably, after two years, to about 1 : 6. The specifications of the engineer department of the District of Columbia require seven days after mixture for neat natural cement 95 pounds, and for mixture with one and two parts of sand 56 and 22 pounds tensile strength per square inch.

Natural Portland cements are manufactured in those rare cases where rocks contain combinations of lime and silicate of alumina in the chemical proportions and physical conditions found necessary for producing artificial Portland.

The treatment then differs from that of ordinary cement only in the higher temperature for burning.—*Stone.*

Is there Oxygen in the Sun?—M. Jaussen, member of the Academy of Sciences, says the *Electrical World*, while observing a beam of electric light on the top of the Eiffel Tower, from a distance of about five miles, discovered that the oxygen band in its spectrum was similar to the oxygen band in the sun's rays. As the intervening atmosphere from the Meudon Observatory to the Eiffel Tower is about as great as the [supposed] depth of the earth's atmosphere, it is argued that the apparent presence of oxygen in the sun may be due to the oxygen in the earth's atmosphere.

Wages in the Pennsylvania Coal Mines.—Professor Bolles, Chief of the Bureau of Statistics of Pennsylvania, has adopted a new method of ascertaining the average wages paid in the coal mines of Pennsylvania. He forwarded to the different collieries blanks in which the wages of ten miners in each colliery receiving the highest amount and ten receiving the lowest amount were asked to be recorded. In this way the wages of about 20,000 miners have been received at the Department of Internal Affairs from about 130 collieries. The wages of the best paid miners amount to over $700 a year, and the lowest to $200. The average in the anthracite and bituminous regions, Professor Bolles says, will be about $500. A considerably lower figure prevails in the bituminous than in the anthracite region.

Ancient Iron Metallurgy.—The oldest pieces of wrought iron now known are probably the sickle blade found by Belzoni under the base of a sphinx in Karnac, near Thebes; the blade found by Colonel Vyse, embedded in the masonry of the great pyramid; the portion of a cross-cut saw exhumed at Nimrod by Mr. Layard—all of which are now in the British Museum. A wrought bar of Damascus steel was presented by King Porus to Alexander the Great, and the razor steel of China for many centuries surpassed all European steel in temper and durability of edge. The Hindoos appear to have made wrought iron directly from the ore, without passing it through the furnace, from time immemorial, and elaborately wrought masses are still found in India, which date from the early centuries of the Christian era.

The Future of the Steam Engine.—In a recent issue of the *North American Review*, Prof. R. H. Thurston, of Cornell University, an

authority on the subject of steam engines, expresses it as his opinion that this invention is capable of vast improvement, and that it has not yet begun to exhaust its inherent powers. On the basis of greater developments in the application of inventions to the steam engine, Professor Thurston predicts that the next generation will see it consuming 1 pound of fuel per hour for a single horse-power; that ships of 20,000 tons will be driven at the rate of 40 miles per hour; that the American continent can be spanned by flying trains in two days, and that transportation between the cities of the Atlantic and those of the Pacific coasts will be so cheap that the general average of living will be vastly improved upon what exists to-day.

Metal in Place of Wood Ties.—The forestry division of the Department of Agriculture has issued an interesting bulletin on the use of metal track on railways as a substitute for wooden ties. The report was drawn up by Civil Engineer Tratman. The Department was induced to look into the subject in view of the large destruction of the forests of this country and the large consumption of timber for railway ties. The conclusion is drawn that metal ties are able in point of efficiency to compete with wooden ones; that their use is extending, and that in point of economy, considering the first cost and durability, the result depends upon the material, the state of the metal market and upon local circumstances.

[One of the important results of the adoption of metal ties will be the preservation of our forests which are now being destroyed to keep up the supply of wooden ties.—ED. E. AND M. J.].

A Large Towboat.—The Knickerbocker Towage Company, of Bath, Me., last week launched its third ocean tug, to replace the "H. F. Morse," lost on Harding's Ledge last winter. The new tug takes rank as one of the largest towboats ever built, being eight feet longer than the "B. W. Morse," which made herself famous in connection with the Leary raft, and the dismasted "Gov. Ames." Her dimensions are as follows: Length, 168 feet; breadth, 30 feet; depth, 17 feet; with a measurement of 488 tons. The frame is of selected white oak, bolted and strapped with heavy iron bands, while the heavy ceiling of yellow pine guarantees the strength of the hull. The engines are compound, with cylinders of 31 and 58 inches diameter, while the propeller has a sweep of 12 feet. The boilers of the "H. F. Morse" will be used in the new boat. She is designed for towing barges on long trips outside.

Steel Ties.—The Western Railway Company of France, after two years' experience with a certain form of steel tie on a part of their system where the traffic is very heavy, are so well satisfied with the result that they have given an order for 5000 to further extend the trials. It consists of a steel body, of an inverted U section, 0·20 metre broad, 0·08 metre deep, and 2·50 metres long. At the parts where the rails rest, chairs are cast on the tie itself, so as to envelop the whole section of the latter over a width of 0·10 metre. To hold these chairs in position, holes or slots are cut in the vertical faces of the tie, into which the metal of the casting runs. Being thus without movable attachments, there is no risk of derangement. The resistance to transverse strains is said to be seven times greater than that of the ordinary form of metal tie of the same surface, and twice that of a wooden sleeper. The rails, which on the Western lines are all double-headed, rest in the chair on a surface two and a half times larger than that of an ordinary chair. The cost is 14 francs, but there is nothing to be added for attachments and supports.

Beginnings of Natural Gas.—The first recorded discovery of a natural gas well in the United States resulted from borings made within the present limits of the city of Charleston, S C., in 1815, but in this case the gas does not appear to have been put to any use. In 1821 natural gas was discovered issuing from a spring at Fredonia, N. Y. This discovery was made by a woman who had gone to the spring one dark night to draw some water in a pail. In order to aid her in doing this, she put down a lantern, when the gas which was rising from the spring took fire. This alarmed the woman, who hastily dropping both pail and lantern, ran back to her home as fast as possible. This gas was first collected by excavating and covering the spring. It was then conveyed into a small holder made of copper, and from thence to one mill and several stores where it was used for light. This was the first practical use of natural gas in the United States. When Lafayette passed through the village in 1824 the hotel called the Taylor House was illuminated with this gas in honor of this distinguished man. The well is said to be producing yet, and Fredonia is still lighted by natural gas.

The Eiffel Tower Elevators.—At the Eiffel Tower an experiment was performed which produced a strong impression on those present. The engineer of the American firm of Otis subjected the Otis lift to a final test before handing it over for public use. The lift, the car of which consists of two compartments, one above the other, weighs 11,000 kilogs., and loaded with 3000 kilogs. of lead—that is to say, weighing 14,000 kilogs.—was raised to a considerable height. There it was fastened with ordinary ropes, and this done it was detached from the cables of steel wire with which it is worked. What was to be done was to cut the ropes, and allow the lift to fall, so as to ascertain whether, if the steel cables were to give way, the brakes would work properly and support the lift. Two carpenters, armed with great hatchets, had ascended to the lift, and were ready to cut the cables. At a given signal, a blow cut the rope. The enormous machine began to fall. Every one was startled; but in its downward course the lift began to move more slowly; it swayed for a moment from left to right, stuck on the brake, and stopped. There was a general cheering. Not a pane of glass in the lift had been broken or cracked, and the car stopped without shock at a height of ten meters above the ground.

Cheap Silicium Copper.—Until now the use of silicium copper has been a restricted one in consequence of the high prices of the alloy, chiefly for telegraph and telephone lines, for which silicium copper wire has been found most suitable, but it is stated that a cheap method of producing it has been discovered in Germany. The idea of using this alloy, for instance, for casting guns is not new. At the request of the French Government Deville and Caron constructed in 1857 two guns of silicium copper (containing 4·5 per cent silicium), the experiments with which were most favorable to its alloy, which the inventors called copper steel in view of its great hardness. The experiments were not, however, continued in view of the high price of the material. There is no doubt that with the new process silicium copper would become a serious and successful competitor of phosphor bronze and aluminium copper, notably also because during repeated melting processes silicium copper does not lose any proportion of silicium, while aluminium copper loses part of the aluminium under such conditions. As regards the use of silicium copper for the casting of guns, it appears that the Prussian authorities (Spandauer Geschützgiesserei) take a very encouraging view of the subject. Many other uses are, however, obvious; for instance, as material for the manufacture of watches in view of its great hardness, etc. The extraordinary qualities of silicium copper telegraph wire have been fully proved by tests made at various times. A further advantage is that the alloys of copper with silicium can be rolled at red heat. There is, therefore, little doubt that this invention will prove of the utmost importance for the future of metal work in all its branches, and particularly in the casting of guns.—*Invention.*

BOOKS RECEIVED.

[In sending books for notice, will publishers, for their own sake and for that of books buyers, give the retail price? These notices do not supersede review in another page of the Journal.]

Directoria General de la Cuidad de Mexico. (General Directory of the City of Mexico.) Published by Emil Ruhland, City of Mexico. 1889. Price, $1.50 and $2.

The Assayer's Manual. An Abridged Treatise on the Docimastic Examination of Ores, and Furnace and Other Artificial Products. By Prof. Bruno Kerl. Translated from the German by William T. Braunt. *Second American Edition.* Edited, with extensive additions, by F. Lynwood Garrison. Published by Henry Carey Baird & Co., Philadelphia. Pages 354 and Index. Illustrated. Price, $3.

Annual Report of the Consolidated Stock and Petroleum Exchange of New York for the fiscal year ending May 31st, 1889. Pages 92.

This little book contains a fund of useful information and statistics, the result of the work of the officers of the Exchange being well systematized. Apart from the special reports by the President, the Treasurer and the Trustees, there are concise reports from the Finance Committee, those on mining securities and on news and statistics and others which are of less general interest.

The President, Mr. Chas. G. Wilson, in his report states "that in the Mining Securities Department the transactions show a total of 5,360,067 shares. The decline in the business of this department is somewhat surprising, in view of the fact that the mining business proper is in a prosperous condition." * * * "I am pleased, however, to say that all the information which reaches me is of a hopeful character, and points to an early revival of interest in mining properties which certainly will be felt nowhere quicker than in our exchange."

From the report of the Committee on Mining Securities, it is clear that the actual state of the mining industry of the country is well appreciated and understood, whilst the complaint of dull business is attributed to various causes, the most important of which we shall deal with at another time.

PATENTS GRANTED BY THE UNITED STATES PATENT-OFFICE.

The following is a list of the patents relating to mining, metallurgy, and kindred subjects, issued by the United States Patent-Office.

PATENTS GRANTED JUNE 11TH, 1889.

404,818. Air Engine. James S. Baldwin, Newark, N. J.
404,824. Bushing for Pulleys. Chester W. Clark and Theron D. Keasey, Mishawaka, Ind., Assignors to the Keasey Pulley Company, same place.
404,826. Cogged Gearing. William Courtenay, New York, N. Y.
404,834. Rotary Engine. Henry Haab, Bristol, Conn., Assignor of one half to J. R. Holley, same place.
404,851. Means for Obtaining Water-Power. David N. Long, Williamsville, N. Y.
404,852. Hydraulic Excavating. David N. Long, Williamsville, N. Y.
404,867. Electric Indicator for Engine-Shafts. James C. Ricketson, Milwaukee, Wis.
404,869. Turbine Water-Motor. Perry T. Sanford, New Haven, Conn.
404,873. Electric Railway. Sidney H. Short, Denver, Colo., Assignor to the United States Electric Company, same place.
404,888. Apparatus for Casting Chill-Rings. Hans Birkholz, Milwaukee, Wis., Assignor to Edward P. Allis, same place.
404,889. Apparatus for Casting Chilled Corrugated Rollers. Hans Birkholz, Milwaukee, Wis., Assignor to Edward P. Allis, same place.
404,891. Dredging Machine. Horace S. Brown, Quincy, Ill.
404,893. Elevating Machine. James E. Byrne, Brooklyn, N. Y.
404,894. Electrically Controlled Engine. James E. Byrne, Brooklyn, N. Y.
404,903. Self-Acting Unlocking Link for Cars. William F. Fisher, Buffalo, N. Y.
404,905. Low-Pressure Engine. Henry Haab, Bristol, Conn., Assignor of one half to Elisha S. Hollister, same place.
404,908. Cupola or Blast Furnace. George M. Hathaway, New York, N. Y., and Edgar B. Stocking, Washington, D. C.
404,909. Ingot Casting Machine. William R. Hinsdale, Hoboken, N. J.
404,935. Hoisting Apparatus for mines. Samuel Salmon, Drifton, Pa., Assignor to Eckley B. Coxe, same place.
404,957. Dumping Wagon. Leopold Busse, San Francisco, Cal.
404,958. Differential Hoisting Mechanism. George F. Clemons, Springfield, Mass.
404,996. Track Laying Machine. Ferdinand F. Voigt, Chicago, Ill.
405,010. Electrically Controlled Engine. James E. Byrne, Brooklyn, N. Y.
405,072. Steam Hammer. John H. Blake, Deering, Me.
405,115. Apparatus for making Seamless Tubes. Irving G. Platt, Waterbury, Conn.
405,116. Steam Pump. Nathaniel J. Pritchard, Milnes, Assignor to the Pritchard Brake Co., Roanoke, Va.
405,127. Steam Rock Drill. Abraham J. Sypher, Iron Mountain, Mo.
405,134. Apparatus for Condensing Zinc Vapors and Collecting the Metallic Zinc Therefrom. Edward Walsh, Jr., St. Louis, Mo.
405,150. Single Acting Steam Engine. Frank W. Dodd, Osborne Road, Forest Gate, County of Essex, England.
405,177. Grinding Mill. Francois Quenehen, and Achille Vansteenkiste, Brussels, Belgium.
405,187. Electric Drilling Machine. Elmer A. Sperry, Chicago, Ill., Assignor to the Sperry Electric Mining Machine Company, same place.
405,188. Electric Mining Machine. Elmer A. Sperry, Chicago, Ill., Assignor to the Sperry Electric Mining Machine Co., same place.
405,199. Well Sinking Apparatus. Thomas G. Chapman, Chicago, Ill., Assignor to Frederick C. Austin, same place.
405,208 Compound Steam Engine. Frederick A. Gardner, Catskill, N. Y., Assignor to F. A. Gardner & Co., same place.
405,225. Boiler Tube Fastening. Henry Schaubel, Philadelphia, Pa., Assignor of one-half to Henry W. Miller, Jr., same place.
405,229. Powder Gas Boiler for Engines. Otto Schneider, Louisville, Ky., and Heinrich Schneider, Oberstein-on-the Nahe, Germany.

PERSONALS

Mr. C. H. Colburn has been appointed coiner at the mint at Carson City, Nev. A mint is to be reopened next month for coinage.

Mr. John Stanton, of the Allouez, Atlantic and Central Mining Companies, left on Thursday for Lake Superior, to be gone about three weeks.

Mr. Silas H. Witherbee, the senior member of the firm of Witherbee, Sherman & Co., died at New York, on the 8th inst., aged seventy-four years.

Mr. Louis Valentine, late Superintendent of the New York & Honduras Rosario Mining Company, at Juancit, Honduras, died there suddenly last month.

Prof. O. C. Marsh, the well known paleontologist of the U. S. Geological Survey, and professor of paleontology at Yale University, is in New York. He is stopping at the Buckingham Hotel.

Mr. James D. Hague, Mining Engineer and President of the North Star Gold Mining Company, of California, has gone to Mexico on professional business He is expected to return in the latter part of July.

The New York Aqueduct Commissioners, prompted by the Johnstown disaster, have decided to create a new official, to be known as the Superintendent of Dam Construction, for each dam in process of building.

Mr. John B. Farish, the expert of Farish & Farish, mining engineers, of Denver Colo., has gone to Arizona on professional business He will make his headquarters at Tombstone, where he will remain up to the 1st of July.

Mr. John A. Macpherson has been elected chairman of the Committee on Mining Securities of the Consolidated Stock and Petroleum Exchange of New York. Mr. Macpherson leaves on the 17th inst. with a party of mining men for an extended "vacation" tour of the mining districts of Dakota, Montana and Idaho.

General John Hammond, who died recently at Crown Point, N. Y., was a conspicuous figure in Northern New York. To his enterprise and effort was due the development of the mining resources of the region —the furnaces at Crown Point and the mining town of Hammondville, back in the foot-hills of the Adirondacks, being the practical result.

The International Labor Congress will soon meet in Switzerland to discuss factory laws and legislation. So far the United States had not officially been invited to send a representative to the congress, and only European nations have received invitations. The Central Federation of Labor of New York has decided to ask that representatives of this country be invited to attend the congress.

The following mine inspectors for Pennsylvania have been appointed, as follows: First District, Henry T. Louttit, Monongahela City; Second District, Henry Jenkins, Irwin; Third District, Thomas K. Adams, Mercer: Fourth District, James N. Patterson, Blossburg; Fifth District, Frederick C. Keighley, Uniontown; Sixth District, Josiah Evans, Johnstown; Seventh District, James Blick, Idlewood; Eighth District, Austin King, McDonald.

The American Social Science Association has appointed as delegates to the World's Congress, to be held in Paris from July 3d to 8th and from August 4th to 11th, Mr. John P. Townsend, of New York; the Rev. John Graham Brookes, of Brockton Mass, and John S. White, LL.D., Head Master of the Berkeley School, New York. Mr. Townsend is chairman of the delegation, and Dr. White is to give an address in French at the August session on "The Moral and Intellectual Value of Physical Training."

Captain George Mitchell died at Negaunee, Mich., on the 5th inst., aged fifty-four years. He came from England in 1864, coming direct to the Lake Superior region. He first went to the copper country, where he spent five years. He then removed to the Marquette iron district, where he has since lived and has been connected with several mining companies. For several years he had charge of operations on the east range as well as of considerable exploratory work elsewhere, but since a year he has not been actively engaged in mining operations.

The International Mining and Metallurgical Congress will be held in Paris from the 2d to the 11th of September next, and communications should be addressed to M. Cashel, president, 144 Boulevard Raspail. The mining section of the congress will deal with the following subjects: Safety lamps, the use of explosives in mines, electricity as applied to underground workings, shot-firing, lighting, signaling, transmission of motive power, the ascent from and descent into mines, etc. The metallurgical section will include the following papers: Recent progress and refining processes and dephosphorization in the manufacture of steel and iron, forging as compared with stamping and pressing, ferro-metallic alloys, their manufacture, properties and use; new metallic alloys other than of iron, especially of copper, and new methods of tempering.

With regard to the arrangements made for the entertainment of the American engineers in England, according to the London *Ironmonger*, the Mayor of Liverpool invited the whole party to a conversazione in the City Hall on the evening of Thursday, the 6th. On Friday, the 7th, members of the party were to be entertained by the London & Northwestern Railway Company at Crewe, by the Midland Railway Company at Derby, and, in all probability, by the Lancashire & Yorkshire Railway Company at Horwich. The Whitsuntide recess will be spent in tours arranged by the London & Northwestern Railway Company and by Cook's agency. On Thursday, the 13th, the whole of the gentlemen will be entertained by the members of the Institution of Civil Engineers at dinner, which will take place in the Guildhall of the City of London, by the express sanction of the Lord Mayor, Aldermen, and Common Council. On the morning of the same day the visitors will be admitted to the Houses of Parliament by permission of the Lord Great Chamberlain. Her Majesty the Queen has been pleased to allow the entire party to visit Windsor Castle and its surroundings on Saturday, June 15th, and St. James' Palace, Buckingham Palace and the Royal Mews on Monday, June 17th. The Archbishop of Canterbury has acceded to a request to allow the members of the American Engineering Societies and their friends to be shown over Lambeth Palace, on Tuesday, June 18th. Excursions up and down the River Thames will be organized, and various privileges will be granted in order to render the visit a memorable one. The Institution of Civil Engineers, with their well-known public spirit and hospitality, are actively exerting themselves in the matter.

INDUSTRIAL NOTES.

Messrs. J. & H. Taylor, dealers in railway and engineers' supplies in Montreal and Quebec, have made an assignment. Liabilities about $135,000.

The Bethlehem Iron Company's, Bethlehem, Pa., Nos. 1 and 5 furnaces, and one of the furnaces at Parryville, Carbon County, are being prepared for blast.

The Keystone furnace at Chain Dam, Pa., is being prepared for blast. Coke is to be used as an experiment, and the owners think they can turn out 600 tons per week.

English investments in Mexico seem to be increasing with the regularity of arithmetical progression. In 1886 they reached two and a half millions sterling; in 1887, five millions, and last year nearly eleven millions.

The second Otis elevator in the Eiffel tower at the Paris Exposition has been officially tested and pronounced safe. The elevators have been made by Messrs. Otis Bros. & Co., of New York, whose branch house in Paris and London is called The American Elevator Co.

The electric coal mining machines manufactured by the Jeffrey Manufacturing Company, of Columbus, Ohio, the company writes us, have proved a complete success and are now in successful operation in the mine of the Shawnee and Iron Point Coal Company, Shawnee, Ohio.

The large sheet mill of the Brooke Iron Company, Birdsboro', Pa., in which there was a strike for a month past, resumed on the 10th inst., all differences having been adjusted. The firm's nail factory, which depended on the sheet mill for its iron, was also to begin work this week.

It is learned that the Canada Pacific Railway proposes to establish large car works in the State of Maine at a point on its line through that State. The company hopes by this means, so it is stated, to avoid the possibility of an interruption to passenger traffic by using American built railway cars.

A correspondent writes us that since the dissolution of the Western Nail Manufacturers' Association the Norton Iron Works, at Ashland, Ky., has resumed in all departments. The furnace continues to make foundry iron of the high silicon grades that have obtained considerable reputation for softness. Their Smith regenerator heating furnaces are supplied with slack coal that cost but 2½ cents per bushel, and have given very satisfactory economical results. It is probable that a change of management will occur in the near future owing to the desire of the President, Mr. John Russell, to retire from active business. His successor has not as yet been chosen.

The Henderson Steel and Manufacturing Company, of Birmingham, Ala., to which we referred in our issue of May 25th, has not yet settled on the location of the plant. Bids thus far have been received from the Elyton Land Company, the Gate City Land Company, the North Birmingham Company and Leeds. All offer considerable inducements. The new plant when built will be a 30 ton converter. The committee on contracts are considering several bids, but as yet no award has been made. It is stated that all the funds necessary for the erection of the new plant have been subscribed.

The pneumatic gun carriage made by the Pneumatic Gun Carriage and Projectile Company, of South Boston, Mass., was tried at Annapolis, Md., on the 12th inst., at the naval proving grounds, by a board of naval officers. Twenty rounds were fired, ten slowly and ten fast. The carriage acted in a satisfactory manner. The recoil of the gun is received upon an air cushion, and a short recoil is a great desideratum on shipboard, where there is little room. The recoil of a field piece of artillery will be from six to eight feet. This pneumatic gun-carriage reduced the recoil to two feet. No accident of any kind happened during the tests. The ten fast shots were made with a minute and a half interval. The gun is furnished by the Government, and is an eight inch, carrying a 250-pound shell, with a charge of 126 pounds of powder.

CONTRACTING NOTES.

Our list of machinery and supplies wanted will be found on page xii Manufacturers of machinery, engineers and contractors should also consult our directory of "Contracts Open" on the same page. This week, proposals are invited for the following new contracts: No. 1444, Furnishing Steel Plates for U. S. Armored Cruiser "Maine"; No. 1445, Supplying Mineral Oil; No. 1446, Constructing Steel Superstructure; No. 1447, Constructing Water-Works and Electric Light Plant; No. 1448, Bridge Construction; No. 1449, Bridge Construction.

GENERAL MINING NEWS.

Shipments of iron ore from the mines of the districts mentioned below for the season up to and including June 5th, as reported by the Marquette *Mining Journal*, were as follows:

	Tons. 1889.	Tons 1888.
Marquette, Marquette District....	288,666	49,757
St. Ignace, " " ..	8,092	23,545
Escanaba, " "	218,055	119,824
" Menominee District....	373,293	150,498
" Gogebic District.....	46,674	41,582
Ashland, " "	279,842	83,972
Two Harbors, Vermillion District.	139,714	19,939
Total tons.....	1,354,336	489,117

ALABAMA.

Three hundred bee-hive coke ovens are now being built by the Bessemer Steel and Iron Company, of Bessemer, and a hundred for the Sloss Iron and Coal Company, near Birmingham. The ovens are being built by Wm. Gates, of Fairchance, Pa.

ARIZONA.

MARICOPA COUNTY.

ORA BELLA MINING COMPANY.—The reduction-works for this company, whose properties are located on the south side of the Bradshaw Mountains, sixty miles north of Phœnix, have now been in operation several weeks.

CALIFORNIA.

AMADOR COUNTY.

[From our Special Correspondent.]

AMADOR, June 5.

COSMOPOLITAN.—This mine is at Dry Creek. This company has decided to sink their shaft 200 feet deeper, and in the meantime drift north under Dry Creek. By the time their 30-stamp mill is completed the mine will be in good shape.

HECTOR CONSOLIDATED GOLD MINING COMPANY.—Messrs. Ballard & Martin, owners of the New London mine, while here visited Sutter Creek in company with Supt. Humphrey Rease, and examined the "Hector" mine as far as they were able. Since then it has been reported, and I have no doubt it is true, they have bought the property from the Valentine Bros. for $74,000. We take pleasure in noting this fact, for Ballard and Martin are thorough business and mining men, and would never have bought that property had they not intended to work it. Superintendent Rease had charge of that property years ago, and has always had faith in it, and no doubt it is largely due to his advice that Ballard and Martin have bought it. With such able men at the head we feel confident this property will be made to pay.

HENRY CLAY.—This mine was recently bought by C. T. Crocker, of Fitchburg, Mass., also one of the principal owners of the Cosmopolitan, is being prospected by driving a tunnel on a level with Dry Creek, across the property. The intention is to run in and strike the ledge, and then sink a shaft on the ledge. This property is under the management of Kendall Crocker, son of C. T. Crocker.

KEYSTONE.—At this mine, in Amador, things are brightening up a little. A large body of ore has been found on the 600, which, the miners say, shows free gold. The full 40 stamps will be running next month.

PLYMOUTH CONSOLIDATED GOLD MINING COMPANY.—Regarding the Plymouth Consolidated mine I will say there was a fire in the mine without a doubt; but as to its extent or the damage done no outsider can or will ever find out. It being reported on the upper levels, my opinion is there was no damage done excepting the delay in working the mine. There is no doubt in the minds of the public but the work in the mines could have been resumed long before it was. My opinion is that the fire was used as a pretext to "bear" the market, and, if so, it was used with good effect, for the price of Plymouth Consolidated shares fell from $23 to $6. Starting up again as they have and showing at once an output that pays considerably over and above expenses it is natural for the stock to go up again. I think it will be some time before the stock sells for $20 a share.

There is no prospect of the Empire portion of the mine being worked. It was reported long before the fire the ore in that portion of the mine was very low grade and I am satisfied it was. Intelligent men who have worked in the Pacific portion of the mine tell

me they cannot see where the ore is coming from to run 40 stamps, much less 80, for more than two years or so. To be sure it is quite likely new ore bodies may be found, and, therefore, the probabilities are the mine will be worked for many years.

Although the management of this great property has been held up as a pattern for other mining companies to follow, I must say there are many things which might be criticised in that management. They now have thousands and thousands of round timbers on hand, enough to last them several years if they would only remain sound, but the fact is nearly all of them are so rotten, especially in the bottom of the piles, they will never be of any practical use. The feeling in and about Plymouth is one of uncertainty regarding the future of the Plymouth Consolidated. It is a question whether the Plymouth people would be any better off under another management, but any way they think it would be better for the town and the company if there was a change. The ENGINEERING AND MINING JOURNAL has received from Secretary H. W. Lazelle the following financial statement to June 1st: Gold bullion produced in February, $6750; March, $20,607.44; April, $20,346.45; May, $19,123.73; total, $66,827.62. Indebtedness, January 1st, 1889, $15,446.93; January expenses, $4,651 08; February expenses, $5,839.56; March expenses, $7770.66; April expenses, $7,528.87; May expenses, estimated, $8000; total, $49,227.05; surplus, $17,600.57.

INYO COUNTY.

KEYNOTE MINING GROUP, LIMITED.—This company has been organized in London with a capital of £50,000 in £1 shares, for the purpose of acquiring a group of mines and a mill site, situate in the Beveridge mining district, Inyo County, together with mining rights, machinery and effects. The number of directors shall not be less than three nor more than five. Remuneration, £525 per annum.

MONO COUNTY.

STANDARD CONSOLIDATED MINING COMPANY.—Secretary Pate informs us that he has just been advised of an ore shipment, embracing the clean-up for the last two weeks of May, valued at $11,700. This makes the gross product for the month about $19,000. Mr. Pate estimates that the expenses for the month aggregate from $15,000 to $16,000. About 43 men are on the pay-roll.

SAN BERNARDINO COUNTY.

The sampling works at Colton are running night and day, using up five tons of rock every twenty-four hours and getting good returns. The works were put up to give mill tests of rocks from all parts of this county.

SIERRA COUNTY.

RED CHIEF GOLD MINING COMPANY.—Superintendent P. D. Barnhardt has issued a circular to the stockholders and officers giving a resumé of the work at the mine during the past year. It appears that as it was necessary to pay for all development work and the cost of erecting a 40-stamp mill by sales of the stock, progress has been somewhat delayed. Considerable difficulty was also experienced with the steam power for the mill. Concerning what has been really accomplished, however, we condense the following from Superintendent Barnhardt's statement:

"Commencing with nothing but the company's stock in hand, and a mine with an abundance of low-grade ore, we have completed a saw mill at an expense of about $3,000; sawed 220,000 feet of lumber that cost, including logging, $2,650; purchased $18,250 of machinery for a 40 stamp mill; paid $6,500 for freight; erected and furnished a boarding house and a blacksmith shop at an expense of about $3,000; constructed 1070 feet of tramway with ore cars and ore house at a cost of $3,200; run 343 feet of tunnels in the mine and 280 feet of upraises, which cost about $6,230; paid for labor in erection of mill and other improvements not mentioned, about $14,000; and have reduced 300 tons of ore in the mill, filling eight of our copper plates with about $1200 of gold, besides saving $275 in bullion. At the present writing we owe only about $3,500, and $2500 more will be required to complete the 40-stamp mill with ample water power and all appliances and facilities for saving gold, and put everything in prime working condition. It will require about $6000 yet to be provided for, to finish the mill, water power, put in flue concentrators and leave the company free from any and all liabilities. With this amount of money in hand we would be able to complete our work and start the 40 stamps within six weeks. It has been demonstrated conclusively that the ore will net about $7 per ton, and that the entire expense of mining and milling will not exceed 65 cents per ton. We have at the present time about 225 feet of tunnels all in solid ore, and from these there are five shafts or upraises to the surface, aggregating 125 feet, also in solid ore. The question of ore to supply the mill for at least twenty-five years is absolutely settled. A working test of the new ore body developed in Red Chief mine shows $85.10 per ton.

COLORADO.

BOULDER COUNTY.

[From our Special Correspondent.]

BOULDER, June 8.

The Osceola-White Crow case, to which attention has been called in previous letters, has at last been settled. The properties have been consolidated, and a stock company formed, with a capital of $250,000. Two fifths of the shares go to the Osceola people, and three fifths to the owners of the White Crow. Of the five directors, three are White Crow men, and two represent the Osceola interest. The whole property has been bonded to the Osceola interest for a period of one year, at terms that are kept secret.

Henry Niekirk, one of the White Crow owners, remains in charge as Superintendent.

This case has been in the courts for several years and has attracted considerable attention here. Each side has been represented by able counsel and has had its "experts," each of whom swore sturdily and pertinaciously to his own version of the facts in the case. The judge has listened patiently to the same testimony repeated over and over again. The tired jurors dozed in their box or gazed in helpless bewilderment at the numerous maps and models offered in testimony by both sides. In course of time the case would be submitted to the jury, a verdict would be rendered and the losing party would ask for a new trial. If the judge denied the request the loser would promptly pay the costs and take a new trial under the statute, which gives the losing party to a suit the right to a new trial on payment of costs. The same witnesses, maps and models would appear before a new jury, who, after listening to the same testimony, would give the case to the loser in the first trial. The new loser would now take a new trial, and the whole performance would be repeated. As the law stands every case is almost sure to be tried at least three times in the lower courts before it goes to the Supreme Court of the State. It looks as though the law had been framed by lawyers for the purpose of promoting litigation. At all events it seems to have that effect.

Mining operations at Ward are being pushed very briskly this season, and men are in demand. All of the mills in the camp are running full time, and more projected.

Mr. Beddore, of the new Niwot Company, is building a large new shaft house on claim No. 7 west on the Columbia lode, and intends to build a new mill in the immediate vicinity.

The Niwot is turning out a large amount of good-looking ore, and seems to be in a prosperous condition.

The Baltimore, just south of the Niwot, is looking remarkably well. No drifting has been done yet, but drifts will be started shortly. The shaft has reached a depth of 103 feet, and shows a continuous streak of ore from the top to the bottom.

The Boston, Utica, Colorado, Modoc, Gage, Puzzler and a number of other mines are being worked and are looking well.

The Columbia is working a small force, which will be increased as soon as pending litigation is settled.

A stroke of considerable importance has been made in the Celestial extension in Spring gulch. The owner is somewhat reticent, but there is no doubt that he has encountered a good body of rich ore.

Taken altogether the camp is flourishing and the outlook bright.

I thought to send you something about the mines at Magnolia but have not yet obtained as definite information as I looked for.

A new road is building from here to Estes Park, over which passengers can be taken from Boulder to the Estes Park Hotel in about eight hours. The scenery along the route, which passes close to the foot of Long's Peak, is varied and beautiful, and will well repay the tourist.

Crops in Colorado will be better, and will cost the farmers less this year than ever before, as the late snows and rains have rendered irrigation almost unnecessary.

Boring for coal and oil is going on north and east of here. So far no discoveries of importance have been made, but all parties are very hopeful.

CUSTER COUNTY.

GEYSER MINING AND MILLING COMPANY.—On May 24th this company received the sheriff's deed to all the property sold nine months ago. The property was shut down pending the months of redemption.

EAGLE COUNTY.

[From our Special Correspondent at Red Cliff.]

Battle Mountain is at present shipping on an average 400 to 500 tons per week. The bulk of this ore goes to Leadville, Denver and Pueblo. With the advent of discovering an entirely new contact below blue or carboniferous lime, and lying in the dolomite, Battle Mountain mining district has suddenly leaped into renewed prominence. It has confirmed the general belief that it was one of the best situated in the entire mining belt of Colorado. She has now not only fissure veins in granite, an immense quartzite, flat vein, and above a carbonate contact similar to that of Leadville, but boasts of a definitely known new contact, which has been pronounced by many of Aspen's best mining men as identical with that of their camp. This summer the entire mountain will be alive with activity. A great number of strangers have recently invested, properties have been bonded and sold, and operations commenced upon the new contact by a process of steady and businesslike development.

BELDEN.—This mine, near Gilman, a carbonate property, and a once famous producer, has again come to the front under the management of J. C. Swinbourne. It laid idle for several years, but lately has been retimbered, pumped dry and shipments of sulphide are now in order. It is undoubtedly entering upon a bright career of success. Three new strikes of vast importance have taken place within the last two weeks. One occurs in the Cleopatra, a carbonate claim adjacent to the Iron Mask. It is said to mill run $75 to $100 per ton. The ore body is about 8 feet thick, very easily mined and cheaply handled, reducing the expenses to a minimum.

Eighteen car-loads, of 20 tons per car, were shipped last month, which will be doubled this month should the body continue to enlarge as it has been doing. A new hoisting plant has been erected. The second of these strikes takes place in the Spirit, lying between the Iron Mask and Cleopatra. The last lessees of this claim uncovered a large ore-body tending downward. Following this down they encountered the second contact, as opened in the Henriette. A winze is being rapidly sunk to intercept these ore-bodies.

HENRIETTE.—To this mine belongs the honor of first opening. The new contract is being worked under a bond to Clint Rudebush et al., of Leadville. As exploration advances, the ore bodies show no evidences of decrease. Solid foundation may be said to have been attained, and the chute is tending upon a regular dip into the mountain, which points conclusively to the fact that the ore is occurring in place and is continuous. Assays from this ore, furnished your correspondent by Mr. Bowland, one of the owners, show $500 to $600 per ton. Just above the dolomite, and in the first contact was recently uncovered a chute of carbonates, which went upwards over a roll of lime to the grass roots. This body has now apparently got over this roll and is again pitching into the hill. Assays from this at the grass roots show the general run to be $100 per ton. Scattered through this body are spots of galena assaying $250. The lowest assay from this mine has been $80 per ton. A tramway will be shortly constructed from the mine to the road near Red Cliff, when shipments will begin regularly.

KINGFISHER.—The third of these notable strikes was in the Kingfisher, another old property under lease to Bayfield & McKinley. It occurs in the form of an immense territory of ore 15 feet high. One hundred tons, netting $25 to $30, have been shipped within the last 5 or 6 weeks. Shipments will be heavier from this time on. These gentlemen have unquestionably a bonanza.

LAST CHANCE.—An inch of exceedingly high-grade ore was opened in the Last Chance fissure in the cañon. The ore is in the form of quartz, carrying iron, copper, pyrites, silver and gold. A portion of the celebrated Ben Butler mine has been leased. Gold and silver specimens taken from the mine, to the value of many thousands of dollars, are exhibited in the windows of the bank at Red Cliff. All the quartzite properties are shipping steadily. The ore bodies on the Ground Hog are especially looking well. The great apex suit—Battle Mountain vs. Champion—will take place soon. The C. & C. shaft has remained idle for several months and no work is being done upon the great ore bodies in Champion breast pending the result of the court's decision. Some Aspen men are beginning to invest here with the purpose of accomplishing thorough and systematic work on the east side of Battle Mountain this summer.

GILPIN COUNTY.

GREGORY BOBTAIL MINING COMPANY.—We understand that this company, to the sale of whose property we referred last week, will be re-organized under the title of the New Gregory Mining Company. Particulars of the proposed re-organization will be given to the public shortly.

LAKE COUNTY.

DUNKIN MINING COMPANY.—This company maintains large ore shipments from the body uncovered by the Matchless along the Dunkin line. The latter ore, as shipped by the Dunkin, says the Boston *Transcript*, is now worth about $70 net per ton, and there is still a considerable body of it in sight. The Dunkin received $3000 from the Matchless for ore taken out by the latter in its unintentional trespass. The Dunkin company is said to have now $40,000 in the treasury in Boston, and about $3000 in Leadville.

OURAY COUNTY.

GOLDEN KING MINING COMPANY.—It is stated that this company has secured possession of the Golden Chicken mill, which it has been negotiating for ever since the latter property was closed down. The company has, however, not purchased the plant, but has bought the judgment against it for $2,600, unless the Golden Chicken decide to redeem it, and to do this they will have to hasten, as the time for redemption has almost expired. Should the company obtain possession of this mill it will increase the milling capacity 20 stamps, giving it 40 stamps altogether, and enabling it to double its output. Work in the mine was commenced last month.

PITKIN COUNTY.

ASPEN MINING AND SMELTING COMPANY.—We are officially informed that all the mines of this company are looking extremely well. The ore produced for the six months ending May 31st was 8,371.88 tons. The usual dividend of $40,000 was declared this week.

BONNYBEL.—J. C. Bates, owner of this mine at Aspen, has instituted injunction proceedings against the Compromise Mining Company and the Aspen mine. It will be remembered that the Bonnybel is in litigation with the Durant over the ore that it has been following. When the Bonnybel worked to the Durant side line, the latter claim brought suit to restrain it from working into its territory. The Bonnybel claimed that it had a separate vein lying far under the Durant contact vein, and on this hypothesis it won. Since the first trial of the case it has been working under court orders within the Durant side line, and has made rich and important developments. The theory upon which the proposed application was made was that the great ore bodies of the Compromise and the Aspen belong to the Bonnybel vein, and that the latter property is entitled to them.

SAN MIGUEL COUNTY.

SILVER GLADE MINE.—Through the agency of Mr. John H. Mitchell, this mine has recently been sold to A. H. Heisey and L. V. Hoag, of Pittsburg, Pa., and L. M. Pettdider, of Denver, Mr. Mitchell retaining one-quarter interest. A small force has been put to work upon the mine, says the Telluride *Republican*, which will be increased as more men can be worked to advantage. This mine has produced considerable high grade ore in the past, but has been under litigation for some time, during which no work has been done.

UNITED STATES GOLD PLACERS.—Work has started up with a full force and the mine will be run for the season. They have a full head of water and will work steadily, washing 16 hours a day. The mine is now fitted up in good shape. The saw mill belonging to the company is now at work sawing dimension timber for the improvements required hereafter for the proper working of the mine. Prof. M. J. Madden is the superintendent.

DAKOTA.

Surveys are about to be made for the Midland & Pacific Railroad through to the Pacific Coast, probably touching at Minnesella, in the Black Hills, making Pierre the initial point on the Missouri. The road is supposed to be backed by Illinois Central.

IDAHO.

CLEVELAND AND ANCHOR LODE MINING COMPANY.—Messrs. Samuel A. Gaylord & Co., of St. Louis, who have been selling the Treasury stock at 25 cents per share, advise us that they disposed of all the Treasury stock that they care to sell at present. They think by waiting until the main vein is cut higher prices will be obtained for the stock. The contractors commenced work this month.

BOISE CITY, June 4.

[From our Special Correspondent.]

The placer season has been the shortest on record, not lasting over 10 days, except on the rivers and large streams.

The scarcity of water has also compelled the closing down of several stamp mills and the reduction of the force on others, so if Idaho holds its rank as a producer of the precious metals this year, they will have to come from the Cœur d'Alene country, where water is not so scarce,

RIDENBAUGH CANAL.—The first seven miles of this is completed, and they are pushing the survey to Nampa with vigor; they hope to have the water there by this fall. The capacity is 30 000 inches. The banks are giving them a great of trouble by breaking almost every day. The banks have a slope of only 1 to 1 on the outside, and 1¼ to 1 on the water side, and in many places the canal is not over 12 feet wide at the bottom. The plan is for carrying 6 feet of water. It would pay better to secure the services of some one who thoroughly understands the work to superintend the construction of canals than to let the contract to the lowest bidder and accept it just when he has it wide and deep enough,

The New York Irrigating and Mining Company's canal is in trouble. It is stated that they have sold $250,000 of stock in New York City on the favorable terms of one-half for selling and one-half to the company. They have surveyed their line of ditch to Snake River. Their plan is practicable and commendable and should be carried through, as it would open up much agricultural land beside the rich placers on Snake River. But it is said that their treasury is empty, and now the unfortunate workmen who have been with them have difficulty in getting meals for their time checks. They have about half a mile of ditch completed, which would cost about $1200.

ALTURAS.—This mine is only running the pumps; they have been closed since the middle of April. The visible pay ore is all worked out, and before they start again they will require money for development work. At present there is very little doing at Rocky Bar.

BANNER.—This mine at Banner has been compelled to close because of the scarcity of water. It is from this mine they say that most of the ore is taken which is used to "salt" prospects when the "experts" come to examine them. They have about a four-inch vein of exceedingly rich ore.

CAMAS NO. 2.—At this mine about three-fourths of the men have been discharged. The mill has never got out a satisfactory quantity of the gold contained in the ore, and they intend trying some other method of concentration.

WASHINGTON.—This mine, 12 miles above Quartz burg, has received a new crusher and also a saw-mill. They are preparing to erect buildings and are said to have a body of quartz of good quality.

ILLINOIS.

The summary of the report on the coal product of the State, prepared by the Board of Labor Statistics, shows the product of the year to be 11,850,000 tons of lump coal, or a total of 13,390,000 tons, including the output of merchantable screenings. This is by far the largest yield in the coal history of the State. The value of the year's coal product at the mines aggregates $13,309,000. This is an increase in the total and a small increase also in the value per ton, which is this year $1.12. Heretofore, since 1880, the value per ton has steadily decreased to $1.085. In the year 1887 the total number of mine employés of all kinds was 29,400, which is the largest number ever reported. The miners alone number 23,600, the remainder being boys and various employés in and out of the mines. The casualties of the year are up to an ordinary average, but no especial accidents occurred. The number killed was fifty-five. Unusual activity prevailed in respect to new openings, the total number being ninety-nine, the greater portion of them in the centre and southern districts of the State. The most promising new mines were opened in McLean and Christian Counties, at Colfax, Saybrook, Mason, Lexington and Pana. Active prospecting is in progress about Taylorville, Oconee, Ramsey, Coffeen, Moweaqua and Assumption, where the coal lies 500 to 800 feet below the surface and is about 7 by 8 feet thick. Machine mining is rapidly on the increase, 20 per cent. of the output of the year being thus produced, and 10 per cent of all the men being employed at machines. By far the largest part of the machine mining is done in the central and southern parts of the State. There is a small decline of about 1 cent on a ton on the wages for hand mining, the average wages for this year being 71$\frac{7}{10}$ cents Notwithstanding the increase of machine mining, 80 per cent or more of the State product is mined by hand. It is shown that as the value of the product and the price paid for mining decreases the shares of the total value which the miner receives increases, and this rule has been uniform with one exception from 54 per cent in 1883 to 64 per cent in the present report.

MICHIGAN.

WASHBURN MINING AND MILLING COMPANY.—The small plant erected at the Washburn shaft, it is believed, will be too small to mill the rock at such a profit as should be secured from the ore. A great deal of the machinery now in use will be continued in the service when the plant is enlarged to a 100-stamp mill, which it is proposed soon to do.

COPPER MINES.

The May product of the copper companies amounts to 4960 tons of mineral, and compares with 4572 tons in April, 4832 tons in March, 4307 tons in February and 4558 tons in January. The Peninsula mine is added to the list of regular producers, having made an output of 65 tons in May, and bringing the number of such producers at Lake Superior up to a round dozen. Making due allowance for the products of various small mines which do not report their figures, it probably is safe to say that the May output of mineral by the Lake Superior copper mines reached an aggregate of 5,000 tons.

CALUMET & HECLA MINING COMPANY.—The *Marquette Journal* says that the water in the Calumet & Hecla mine is now at the thirtieth level, and as soon as the hoisting of water by the water skips can be dispensed with, miners will begin stoping, and the hoisting of rock will begin in the Calumet shafts.

TAMARACK MINING COMPANY.—The company has declared a quarterly dividend of $3 per share. The mine looks about as it has. Underground development has reached the 11th level, and the second shaft will probably strike the lode in the early fall. The product has fallen off a little, but it is surmised that it is optional with the company whether the reduced output shall continue.

IRON MINES.

In consequence of the destruction of the Cambria Iron Works at Johnstown, Pa., the Pennsylvania Iron Company, owning several large mines in and near Norway, has ordered all shipping of ore discontinued and the immediate discharge of several hundred workmen here.

BESSEMER CONSOLIDATED IRON COMPANY.—The Iron King mine at Ironwood shut down on the 10th inst., the result, it is said, of trouble between the stockholders, and was decided upon at a meeting on the 8th inst. The Bessemer Consolidated Iron Company, it will be remembered, absorbed the Burton properties. It took the Bonnie, Iron King, First National, Blue Jacket and Valley mines, paid most of their debts, and one by one they have been practically abandoned, the Iron King being the last to dismiss its men, owing, the superintendent says, to a lack of ready cash. The Bessemer Consolidated Company's bonded indebtedness is $850,000.

PABST.—This mine in the Gogebic range has been sold to the Metropolitan Land and Iron Company, owners of the Norrie mine, it is reported, for $400,000.

MINNESOTA.

The annual meetings of the Duluth and Iron Range Railway and Minnesota iron companies were held at Duluth on the 10th inst. In the railroad company the only changes were the election of M. J. Carpenter as vice-president and director in place of R. H. Lee, and D. H. Bacon director in place of Samuel P. Ely. In the iron company the only change was the election of R. H. Lee as director and member of the executive committee in place of C. Tower, Jr.

The surplus for the year, $1,300,000, was voted to be used at the discretion of the executive committee for the improvement of the property. It is learned, though not officially, that this means no less than the building by the company of a line of vessels to carry its ore to the eastern markets.

MONTANA.

LEWIS & CLARKE COUNTY.

Fifty men have been put to work on the Broadwater group of mines on Red Mountain, 20 miles from Helena, and ore is now being shipped to the Helena smelter. These mines were purchased two years ago by C. A. Broadwater, of Helena, and James H. Hill, of St. Paul, it is stated, for $168,000. The purchase included a number of claims well developed and showing a good body of high-grade but refractory ore. After many experiments a process was found where by it could be worked successfully.

SILVER BOW COUNTY.

PARROTT COPPER COMPANY.—About 250 cars per day are being hoisted from the Parrott, the ore coming mostly from the 500 and 700-foot levels. The ore is of excellent grade and rich in silver. The Bologna, joining the principal claim on the south, and acquired by the company last year, will be worked from a cross-cut from the 700-foot level.

NEVADA.

ELKO COUNTY.

"There are seven mines in the Tuscarora camp that are being steadily worked," said Mr. E. R. Grant to a representative of the ENGINEERING AND MINING JOURNAL this week. "These are the Navajo, Belle Isle, North Belle Isle, Nevada Queen, Commonwealth, North Commonwealth, and Grand Prize. On account of the lack of milling facilities, with the exception of the Commonwealth and Grand Prize, only a comparatively small force is employed at any of the mines. The twenty stamp Union mill is running regularly on ore from the Commonwealth and it is hoped to have this mine on a dividend paying basis by July. I have just been advised that the Commonwealth made a shipment on the 10th inst. as a result of a three days' work of the gross value of $12,500. On the Grand Prize property, the new concentrating works are nearing completion.

"The works will have a capacity of 100 tons per day. The shafts at both the North Commonwealth and the Del Monte are now down 225 feet. The lack of sufficient mill power, however, greatly retards the progress of the mines, and I can't understand why the Navajo-Independence five-stamp mill was shut down. The Navajo had cleaned up most of the ore on the dump, and had paid four $10,000 dividends, but the mill could have been very advantageously employed at any of the other mines. It should be understood, of course, that all of these mines, excepting the Grand Prize, are on the ledge, adjoining one another in the order named above, and are virtually under one management. The Nevada Queen has just levied an assessment of $50,000. The Union mill was run steadily on ore from this mine during the month of April in the hope of clearing the company from debt, but the attempt was not successful, and the present assessment has been expected. It is a source of some gratification that the grade of the ore has not fallen off."

EUREKA COUNTY.

RICHMOND CONSOLIDATED MINING COMPANY.—There is said to be a prospect that this company will now join the Eureka in the expense of pumping operations that will be essential to the exploration of either property to any greater depth. This means a return of prosperity to this important district.

HUMBOLDT COUNTY.

ADELAIDE COPPER COMPANY.—The 30-ton water-jacket smelting furnace of this company at Golconda started up again on the 3d inst. As there is plenty of ore, coke and flux on hand, it is expected that the company will make a long run and begin shipping bars shortly.

STOREY COUNTY—COMSTOCK LODE.

The pay-rolls of the different Comstock mining companies for May amounted to $235,128. The above is merely the sum disbursed in wages to employés and does not include other operating expenses. Of the total disbursed the Con. Cal. & Va. office paid out $55,609.

At meetings of the board of directors of the Potosi, Bullion, Alpha Consolidated and Exchequer mining companies held on May 31st, an agreement was entered into and signed whereby all of these mines will immediately begin to prospect and develop hitherto unopened portions of their ground through the Ward shaft to which we referred in our issues of April 27 and May 25.

Pending the ratification and signing of the above compact the Ward shaft has already been put in good order at a cost of about $1,500, and work will be started on the 950 level. Several west drifts are to be run in the mines and the large areas of unexplored ground will be thoroughly opened.

COPPEROPOLIS.—A vein of ore showing 20 feet in width in a cut just run below the surface croppings has been developed in this claim, situated a mile northeast of the Harris mine in the Hills bordering Washoe Valley. Assays of selected samples of the ore, it is said, show a value of $13 in gold and $5 in silver per ton. The ore carries 16 per cent in copper. The owners are about to let a contract to sink a shaft 100 feet in depth on the vein.

CONSOLIDATED CALIFORNIA & VIRGINIA MINING COMPANY.—The total amount of ore worked during May was 12,686 tons, yielding gold, $132,077.15 and silver, $164,165 21, a total product of $296,242.34. The average assay value of ore was $28.15, and the average yield $23.35, of which $10.41 was in gold and $12.94 in silver. The ore yield for the week ended June 1 shows an improvement of nearly $3.50 per ton in value above that extracted the week preceding, and $4.22 per ton above that of the lowest average of any week in May. The starting up of the California battery mill, in addition to the crushing power of the Eureka and Morgan stamp-mills, is among the early probabilities. The men employed in the mine, who

have heretofore been required to labor ten hours, will be divided into eight hour shifts. The change went into effect on the 4th inst. The ten-hour system was inaugurated in the mine in 1885, when Senator Jones had a lease of a certain portion of the ore-producing ground in the Consolidated Virginia.

CONSOLIDATED NEW YORK MINING COMPANY.—The westerly strike of ore in this mine in the Devil's Gate District and near the Justice and Alta mines, is pronounced important by the Virginia City papers. Preparations are making to extensively explore the new find.

CROWN POINT MINING COMPANY.—At the annual meeting the following officers were elected to serve for the ensuing year: C. L. McCoy, President; A. K. P. Harmon, Vice-President; James Newlands, Secretary, and S. L. Jones, Superintendent. The Secretary's report shows an indebtedness of $16,411.

HALE & NORCROSS MINING COMPANY.—The May bullion yield of the mine will be about $103,000.

SEGREGATED BELCHER AND MIDES CONSOLIDATED MINING COMPANY.—At the annual meeting of this company the following officers were elected: Thomas Anderson, President; H. M. Levy, Vice-President. S. L. Jones was appointed Superintendent, and E. B. Holmes, Secretary. There is a cash indebtedness at bank of $20,696.28, and an assessment of 25 cents per share was levied to liquidate it. The Superintendent's annual report of operations contains the following information of interest: The ore cut in upraising above the 1300 level has a depth of of 70 feet on the slope, assaying from $5 to $70 per ton. Several narrow streaks of high-grade quartz were cut in extending the 1100 level west cross cut, one of them 2 feet in width assaying from $40 to $80 per ton. The ground so far prospected on the level is favorable in character, and there is still a large area of unprospected ground.

NEW MEXICO.

SANTA FE COUNTY.

SANTA FE COPPER COMPANY.—Mr. Jay A. Hubbell, President of the company, has just returned to Boston from his visit to the mine. He confirms the report of the sale of 300,000 pounds of the mine's products. The sale is in four lots to as many parties, and the price 11@11¼ cents per pound. The cost of laying this copper down in New York is said to be not over eight cents per pound. Other sales of smaller lots are making from time to time.

SIERRA COUNTY.

According to reports the Enterprise, Calidonary, Sakagetigo, the Moffart group, the Irving and the Kingsmith, Lead Prosperity, situated in Carpenter district, Sierra county, have been sold to English parties.

OHIO.

Messrs. W. P. Brooks & Son, miners and coal shippers, of Columbus, have made an assignment. Assets, $250,000; liabilities, $150,000.

PENNSYLVANIA.

PHILADELPHIA & READING RAILROAD.—The Harrisburg Terminal Company, which has just been chartered in the interest of the Philadelphia & Reading Railroad will, it is reported, begin work immediately in the construction of a bridge across the Susquehanna River to connect the Harrisburg & Potomac Railroad on the west bank and the Lebanon Valley branch on the east. The line will be a valuable feeder to the Philadelphia & Reading, furnishing it with soft coal tonnage from the Western Maryland Railroad. The Harrisburg & Potomac Railroad has always been shut off from the Reading system.

COAL.

At a meeting held in Pittsburg on the 13th inst. of the Executive Committee of the Coal Miners' Association of Western Pennsylvania, it was resolved to order a general strike on the 15th inst. against the company or "Pluck Me" stores. At all places where the operators insist upon the miners buying from these stores the men will be ordered out.

LEHIGH VALLEY COAL COMPANY.—The Exete breaker of this company, the last of seventeen collieries, near Pittston, began work on the 11th inst. after an idleness of five months.

LEHIGH & WILKES-BARRE COAL COMPANY.—Mortgage 5 per cent bonds due November 1st, 1912, $2,887,000, have been listed at the New York Stock Exchange.

OIL.

Exports of refined, crude, and naphtha from the following ports, from January 1st to June 7th:

	1889. Gals.	1888. Gals.
From Boston	1,609,273	998,782
Philadelphia	54,922,425	48,123,650
Baltimore	1,438,927	2,009,401
Perth Amboy	8,690,494	9,591,254
New York	169,332,030	149,746,371
Total exports	235,993,149	210,469,468

The Chief of the Bureau of Statistics reports the total values of the exports of mineral oils from the United States for the month of May, 1889, and during the eleven months ended May 31st, 1889, as compared with similar exports during the corresponding periods of the preceding year as follows: May, 1889, $3,988,126; May, 1888, $3,890,985; eleven months ending May 31st, 1889, $45,158,554; eleven months ending May 31st, 1888, $42,849,967.

BEAR CREEK OIL REFINERY.—This refinery, at Coleman Station, was burned on the 13th inst. The foreman perished in the flames, and the superintendent was fatally burned. Others were badly burned.

TENNESSEE.

The American Association is about to commence the building of a number of bee-hive coke ovens at Cumberland Gap.

TEXAS.

The celebrated case of the State against the Texas railways for forfeiture of 15,000,000 acres of land was decided on the 10th inst. Several months ago Attorney-General Hogg began suit in the court against the Southern Pacific Railway and other lines for the return to the State of 15,000,000 acres of land which had been given to the railways on certain conditions. These conditions the State showed were violated and the forfeiture of the lands was demanded. Judge Key decided in favor of the State, and held that the railroads had wilfully violated the conditions and had no title to the lands. A great portion of the lands have passed into other hands, having been sold by the railroads, and under the decision the supposed owners have no titles.

UTAH.

SUMMIT COUNTY.

ALLIANCE MINING COMPANY.—This company is arranging for the equipment of the old Sampson hoisting works with new and more powerful machinery so that developments can be pursued with greater advantage. A few men are now at work at the mine getting things in shape for a larger production of ore this season, and the plan is to extract and ship sufficient ore from the upper levels to pay operating expenses while the 4800-foot drain tunnel to tap the mine at a depth of 1500 feet is being driven.

WOODSIDE MINING COMPANY.—This company has been organized with a capital stock of $1,000,000, shares $10 each. The object is to operate the ten claims in the Woodside group, viz.: the Woodside, Woodside Extension, San Joaquin, Huron, Jeremiah, Tenderfoot, Virginia, Arms, Solace and Samoa. The officers are: E. P. Ferry, President; D. C. McLaughlin, Vice-President; W. V. Rice, Secretary and Treasurer.

VIRGINIA.

BOTETOURT COUNTY.

CIRCLE & WOODSON COMPANY.—This new mining company or partnership has been organized at Glen Wilton, near the Princess Furnace property. It is the intention to mine brown hematite ore for the market.

FOREIGN MINING NEWS.

CANADA.

PROVINCE OF QUEBEC.

EMERALD CENTRAL LAKE AND LIEVRE DISTRICT PHOSPHATE COMPANY, LIMITED.—This company has been organized in London with a capital of £150,000, shares £5 each, of which 26,000 are now offered to the public at par. About £40,000 of this amount will be reserved for acquiring other phosphate properties.

EXCELSIOR COPPER COMPANY.—This company of Harvey Hill is said to be turning out three car loads per week of very rich ore, which is being shipped to Vivian & Co., the large copper smelters in England. It is said the mine is improving all the time the further the work goes down. Over a hundred men are employed.

CHILI.

The French Minister at Santiago reports: Recently numerous schemes have been promulgated, and committees have investigated the best methods of establishing communication between the Argentine and Chilian railways by a line across the Andes chain. The project which appears the most feasible, by reason of the small extent of line to be constructed and the large centers of activity to be put into communication with each other, consists in connecting the extreme Chilian station of Santa Rosa de Los Andes to the terminus of the Argentine line at Mendoza, the distance being 177¾ miles—56 miles on Chilian territory and 121¾ miles on Argentine. The works have been commenced on Argentine territory and carried cut for 28 miles beyond Mendoza. A second scheme has been proposed, consisting of a line 785 miles long, crossing the Andes much further south than the preceding—starting from Valdivia, on the Pacific, passing through Chapeles Kedina and Carmen de Patagores, and ending at Bahia Blanco on the Atlantic. A third project has been submitted by a Chilian company, consisting of a line 149 miles long, passing the Corderillas further north—starting from San Antonio station on the present line from Caldera to Copiapo, following the courses of the Jorquera, Turbio, and Cachilos rivers, and ending at Pucha-Pucha on the Argentine frontier. The most successful will probably be that which, pushed on with most activity, offers the best prospects to capitalists; the commercial relations and the transit between the Argentine Republic and Chili not being important enough to need several companies.

MEXICO.

LOWER CALIFORNIA.

Writing from Camp Alamo on the 8th a correspondent of the *Two Republics* says: "A. H. Butler's stamp mill and engine arrived last week and he astonished the natives on Sunday last by blowing the first whistle in camp. The Princess mine, owned by a number of Mexicans, was sold last week to the International Company for $30,000, $15,000 cash, balance in ninety days, which was very cheap, as there is more money than that in sight."

REPUBLIC OF COLOMBIA.

[From Our Special Correspondent.]

The rainy season has set in and water seems to be plenty, although the season is not as wet as was expected and with June comes another dry spell. Mr. D. T. Hughes has been some days in Santana examining the Diaz mine for Bogota parties. He expects to start for New York soon.

BOCORNA.—Two shipments of gold have been made from here, and although comparatively small, they were quite satisfactory and encouraging to the superintendent, as the mine is only being prospected.

MALPASO.—The last shipment from this mine was four bars, after a seven weeks' run. The cause for the decrease in the output is that drifting on the rich streak had been suspended.

ORITA.—The new ditch and inverted siphon are now being used. The last clean-up was somewhat better than the previous one, as water is plenty and the breaks I spoke of in my last have not re-occurred

LA RICA (of New York).—Since the rainy season began, work has been more lively and the superintendent talks of soon shipping a bar of gold.

LA RICA (LONDON).—This mine should not be confounded with the La Rica of New York. Work is suspended on this placer owing to lack of water. A survey has been made for a ditch nine (9) leagues in length, and it is proposed to commence work soon.

BOCANEME.—Mr. D. T. Hughes has been relieved from the superintendency, the mine having changed hands, and Mr. S. W. Blakely is at present in charge. Ore is still being piled up ready for shipping. A new superintendent, with some more men, is expected soon.

EL CRISTO.—The survey for the tramway has been completed, an estimate of its length and cost has been sent to the company, and the superintendent is waiting for orders to begin work. Ore continues to be shipped, but some difficulty is being experienced in getting the river boats to take it down to Barranquilla, as mineral pays only about half the regular freight rate. Water is not very plenty, but an engine and boiler are on their way up the river and will soon be in place at the mine and at work.

LOS BOUJAS PLACER MINING COMPANY.—This is a new company formed in London. Mr. T. H. Linklater has been in Honda for some time to receive possession of the mine and put it into operation. An old Spanish ditch is being re-opened, and Mr. Linklater expects to commence piping inside of two months. Los Boujas lies some ten miles south of Malpaso and Orita.

SOUTH AFRICA.

DIAMOND COMPANIES.—Negotiations have been going on for a general scheme of amalgamation among the South African diamond mining companies, with the De Beers Company at the head. It will be remembered that the Kimberley Central Company was taken over by the De Beers Company some months ago, upon terms which were generally considered to be favorable to the former. At the time that these arrangements were made it was suggested that the De Beers Company would be able to dictate terms to the smaller undertakings; but events have proved that the smaller companies were in a stronger and more independent position than was currently represented. After considerable delay the De Beers Company has come to terms with the Griqualand West and Consolidated Bultfontein companies. In the former case the arrangement made is upon the basis of a 4 per cent guarantee on the ordinary capital, and a 6 per cent guarantee on the debentures, while in the latter case the company receives a 7½ per cent guarantee on its nominal capital. It remains to be seen what values these guarantees of the De Beers Company possess. The Bultfontein Company is also expected to join the fusion, but the Anglo-African Company and the London and South African Exploration Company appear to be determined to hold out for better terms than Mr. Cecil Rhodes, the chairman of the De Beers Company, is prepared to give. The Exploration Company holds a large number of claims in the Bultfontein and Dutoitspan mines, and is in such a position that it can afford to stand out of the amalgamation arrangements if the terms offered are not considered sufficiently tempting to induce it to throw in its lot with the De Beers Company.

SOUTH AUSTRALIA.

A DISCOVERY OF PETROLEUM IN AUSTRALIA.—It is reported that a valuable discovery of petroleum has been made at Yorketown, South Australia, and that the Government has granted the discoverer, Mr. A. Tocchi, the exclusive right to search over an area of 90,000 acres of Crown lands at Southern Yorke's Peninsula, in order to enable him to locate the spring from which the oil flows. The district is close to the sea coast, and is only sixty miles from Port Adelaide, so that the prospects of the future utility of the discovery will be very much encouraged by the facilities of transport by which it is surrounded.

FINANCIAL STATEMENTS.

The following statement shows the financial balances of the principal mining companies having offices in San Francisco on June 1st and on May 1st, 1889. The comparison shows what progress has been made toward a dividend paying position.

CASH ON HAND.

	May 1st.	June 1st.		May 1st.	June 1st.
Alpha...	$10,161 90	$7,127.41	Imperial	12,983.43	12,511.81
Alta....	56,535.81	42,651.58	Ind'ence.	1,690.09	1,509.34
Andes..	7,097.77	4,411.37	Justice .	b6,451.25	.....
Belcher.	16,372.59	8,722.62	Loco'tive	264.64	4,164.16
Belle I..	.....	2,330.24	Lady W	23,170.18	22,887.68
Bulwer.	.....	16,210.07	Mex'can	14,790.94	9,478.54
Benton..	94,472.82	94,3 2.82	Mono...	23,981.21	23,409.68
Billion.	21,605.44	18,220.19	Navajo.	c11,249.34	f. f.
Bodie C.	38,210.74	39,104.61	Ophir...	23,160.18	.....
Crocker.	3,427.90	927.27	Ov'man.	11,595.12	8,139.88
Con.Cal.			Occi'tal.	2,233.68	36,618.34
& Va..	a103,064.56	d78.235.28	Peer....	1,239.44	717.49
Cale'nia	10,222.34	10,115.14	Peerless	7,275.66	10,933.95
C'nfid'ce	61,959.94	23,497.95	Potosi..	.....	6,856.46
Diana...	.....	4,040.95	Sco'pion	6,202.88	.....
Eureka..	4,184.99	.....	Sil'er K.	58,477.92	47,553.76
Exch'er.	1,919.95	22,892	Stan'ard	5,563.47	7,871.32
Gould &			Sierra N	9,994.83	3,740.41
Curry.	2,201.09	1,194.14	Utah C.	14,226.23	8,171.84
Hale& N	31,907.02	e50,438.31			

a Cash in bank and unsold bullion on hand valued at $133,378.71, with further shipments to arrive before the close of the fiscal month and operating expenses unpaid.

b With bullion valued at $10,000 in transit.

c And $8,822 in unsold bullion.

d And $133,409.89 in unsold bullion with further shipments to arrive.

e With full bullion product and expenses of the mine for the month not reported.

f Overdrawn 177.82, but have bullion unsold amounting to $14,500.

INDEBTEDNESS.

	May 1st.	June 1st.		May 1st.	June 1st.
Best & B	$7,331.36	$5,235.41	New Y..	7,683.06	.....
Belle I..	5,617.21	.....	Nev Q..	54,812.01	51,687.18
Bulwer.	1,916.83	.....	North C	4,303.60	7,497.94
Chal'ge.	5,680.20	7,606.17	N. B. L..	14,252.71	29,323
Cro'n P.	15,745.00	16,411.38	Ophir...	2,231.36	5,613.03
C'mw'th	70,799.85	61,884.22	Potosi...	37,838.90	.....
Con.N.Y	8,691.48	9,704.46	Savage.	25,125.28	.....
Challar.	14,327.66	16,611.85	Seg. Bel.		
Del Mo..	6,673 07	9,162.68	& M.C.	17,357.47	.....
Grand P	26,051.01	29,911.37	Weldon.	926.30	1,129.61
Holmes.	4,002.48	4,290.38	Syn'cate	8,522.71	.....
Julia....	5,747.85	.....	Union...	.....	1,648.07
Kent'ck	2,015.31	.....			

MEETINGS.

American Mining Company, 11 Pine street, New York city, June 15th, at ten o'clock.

Tolima Mining Company, Room 114, No. 6 Wall street, New York city, June 18th, at twelve o'clock noon. Carlos C. Alden, Secretary.

DIVIDENDS.

The following dividends have been declared:

Aspen Mining and Smelting Company, of Colorado, dividend No. 8, twenty cents per share, or $40,000, payable June 14th, at No. 54 Wall Street, New York City. Transfers closed June 12th.

Calumet & Hecla Mining Company, of Michigan, five dollars per share, or $500,000, payable July 15th, in Boston, to stockholders of record June 15th.

Homestake Mining Company, of Dakota, dividend No. 131, ten cents per share, or $12,500, payable June 25th, by Lounsbery & Co., 15 Broad Street, New York City.

Idaho Gold Mining Company, of Grass Valley, Cal., dividend No. 236, five dollars per share, or $15,500, payable June 10th at Grass Valley.

Ivanhoe Gold Mining Company, of Colorado, five cents per share, payable June 15th.

Pacific Borax, Salt and Soda Company, dividend No. 20, one dollar per share, payable June 10th, at No. 230 Montgomery street, San Francisco, Cal.

Tamarack Mining Company, of Michigan, dividend No. 6, three dollars per share, or $120,000, payable July 1st to stockholders of record June 12th.

Tennessee Coal, Iron and Railroad Company, semi-annual dividend of four per cent on the preferred stock, payable July 1st, at the Fourth National Bank New York City.

ASSESSMENTS.

COMPANY.	No.	When levied.	D'l'nq't in office.	Day of Sale.	Amn't per share.
Bellevue-Idaho, Id..	.....	May 11	June 17	July 6	.10
Best & Belcher, Nev	43	June 6	July 11	Aug. 1	.25
Cora, Dak.....	4	Apr. 27	June 1	June 25	.05
Equitable T., Utah..	34	May 14	June 20	July 15	.05
Gould & Curry, Nev	62	May 1	June 5	June 27	.30
Kentuck, Nev.....	18	Apr. 26	May 29	June 19	.30
Locomotive, Ariz..	4	Apr. 25	May 25	June 18	.05
Nevada Queen, Nev	5	June 3	July 9	July 30	.50
North Rapidan, Nev.	3	May 1	June 10	July 10	.01½
†Pinal Cons., Ariz...	9	May 15	June 21	July 12	.05
Ophir, Nev.....	55	May 11	June 13	July 2	.50
Rainbow, Dak.....	4	May 6	June 7	June 26	.01
Seg. Belcher, Nev..	3	June 4	July 8	July 29	.25
Sierra Nevada, Nev.	95	June 7	July 11	July 31	.25
Union Cons., Nev...	38	May 13	June 19	July 10	.25
Weldon, Ariz.....	13	May 13	June 18	July 9	.10

*Delinquent day and day of sale postponed to dates given above.

†Notice is given that assessment No. 8, of ten cents per share, levied April 13th, 1889, upon the capital stock of the Pinal Consolidated Mining Company was rescinded by the directors at a meeting held May 15th, 1889.

MINING STOCKS.

New York.

FRIDAY EVENING, June 14.

Mining shares during the week have been quiet, but generally steady. We understand that during the coming year the Committee on Mining Securities of the Consolidated Stock and Petroleum Exchange will make strenuous efforts to increase the business of the mining department. At the annual election on Monday last several changes were made in this committee. Mr. J. A. Macpherson was chosen Chairman, in place of W. C. Hendrie, and Messrs. S. White, Jr., and H. R. Lounsbery were elected members in the places of George W. Hoagland and L. V. De Foreest. The full committee is now composed as follows: J. A. Macpherson, Charles H. Badeau, W. C. Hendrie, S. White, Jr., and H. R. Lounsbery. The members of this committee are well known, enterprising and energetic men, who, we should judge, are well chosen for the purpose of devising means to revive interest in mining speculations in this market. From the annual report of the committee on mining securities, issued this week, we take the following tabulated statement of the transactions in mining shares for the years ending April 30th, 1887, 1888, 1889, which is as follows:

Month.	1886-7.	1887-8.	1888-9.
May	292,740	1,169,215	433,350
June	256,585	774,141	385,765
July	229,879	845,895	919,790
August	196,263	625,326	33 ,108
September	222,847	686,074	336,735
October	410,461	484,246	464,002
November	833,433	640,707	274,870
December	2,945,113	400,797	397,609
January	679,411	749,315	490,732
February	762,858	468,036	713,643
March	2,419,047	506,335	435,025
April	1,172,003	320,290	337,500
Total	10,420,630	7,670,378	5,522,129

Accompanying the above statistics is a carefully prepared report as to the causes of the dullness in the mining market, to which we shall refer in a later issue.

Dividends amounting to about $700,000 have been declared by mining companies during this week. This is the best kind of testimony as to the condition of the mining industry and as to the desirability of mining investments.

The stock of the Ward Consolidated Mining Company has been ordered upon the list of the Exchange, and dealings will shortly be in order. The officers of this company are: W. B. Dickerman, President; George G. Nevers, Vice-President, and W. G. Dominick, Secretary and Treasurer. The board of trustees is composed of the foregoing officers, together with A. H. Porter, B. Dominick, F. B. Nofsinger, George B. Green, J. A. Edwards and S. R. Lesher. From the sworn statement of the company to the Exchange we take the following: "Amount expended for development work, $150,000; average value of ore per ton, $20@$30; cost of smelting, $10@$14. About 8000 tons have been mined by the present company. The company has no debts, and has $50,000 cash on hand." There were no transactions in Aspen. Iron Silver sold as low as $1 80. Robinson Consolidated was firm at from 44@45c. Plutus was dealt in only the early part of the week at from 90@92. Little Chief ruled at 32@33c. Leadville at 11@12c. Silver Cord at 60c. Cashier at 4@5c. Some 15,900 shares of Lacrosse changed hands at 9c.

The were no sales in Homestake but there was considerable demand. The company has just declared its 131st dividend, amounting to $12,500. Iron Hill shows one transaction at 38c. Sullivan Consolidated shows a lower movement and went down to $1.

There is no change to note in Rappahannock, which continues at 9c.

Although the Consolidated California and Virginia Mining Company is paying large dividends the stock continues to decline, and this week was quoted as low as $7.25. The other Comstock stocks show little change in price, and transactions in this market are small.

There is little doing in Eureka Consolidated, which sold at $2@$2.25.

In the Tuscaroras, North Belle Isle was quoted at from $1.20 to $1.30. Commonwealth, which is rarely dealt in, brought $4 70.

Sutro Tunnel stock was neglected, and only one sale of Trust Certificates is recorded at 53c.

In our Mining News we publish full information relating to the Plymouth Consolidated Mining Company, which will be of value to those interested in the stock. Only 300 shares were sold this week at from $10.25@$10.38.

There was one transaction in Brunswick at 5c.

Quicksilver Preferred advanced to-day to $39.75. Common ruled at from $6.13 to $6.75.

Hector sold as low as 15c.

The only sale in the "Bodies" was in Bodie Consolidated at $1.25.

The Amador stocks are attracting little or no attention

Horn-Silver is weak, selling at from $1.20 to $1.50. Ontario holds its own at $34 50.

Moulton remains steady at 44c.

The manipulators of El Cristo are allowing it to rest, and only one sale is recorded at $1.60.

Mutual is still held at $1.45.

San Sebastian, which is rarely dealt in, came out at 20c.

United Copper advanced from $1.10 to $1.20 and later declined again to the former price.

Central Arizona, which has long gone out of existence, was sold at from 5 to 7. The attention of the Committee on Mining Securities is called to this stock.

Advance proofs have been furnished exclusively to the ENGINEERING AND MINING JOURNAL of the following statement, which will be issued to-morrow to the stockholders of the Phœnix Mining Company, of Arizona. It reads in full as follows: The committee appointed at a meeting of stockholders held December 22d, 1888, to protect the interests of the stockholders, desire to present a statement of the results attending their endeavors since the issue of their last circular. In doing so they take occasion to state that their progress has been attended by a great many unexpected difficulties, which have necessarily delayed them in placing the information before their constitutents. The distance between New York and Arizona, the difficulty of communication and the necessity of consultation between counsel in Arizona and the committee and their counsel here, regarding almost every detail of the matter, have alone caused considerable delay. The counsel originally retained in Arizona also proved unsatisfactory to the committee and some time was lost before the legal side of the matter could be placed in satisfactory hands. The committee, by application to the Territorial Court, was successful in temporarily staying a sale under the judgments and thus protected the stockholders from loss. It was found, however, that whatever suspicion might attach to the judgment held by the Hartford Banking Company, of Phœnix, against the property, under which there was danger, that the rights of the stockholders might be extinguished, it was ascertained that, in part at least, it and other claims had a foundation which rendered it a matter of great difficulty and doubt whether they could be set aside by legal proceedings. Ascertaining these facts, however, was a matter of some time, so that the successive steps taken by the committee have been necessarily slow.

Under these circumstances, counsel both in Arizona and New York strongly urged that a compromise of the judgment and claims be made, on the ground that the expenditure for legal proceedings and the delay which such action would entail only involved a heavier expense than a compromise of claims and judgments. Acting on this advice, the committee borrowed the funds necessary to purchase the claims and judgments, and now hold them as trustees, pending the ratification by the stockholders of the execution of a mortgage upon the property of the company for the sum advanced. This amounts to $11,000, which was used solely to cover disbursements for the purpose indicated. In this way the rights of the stockholders are fully protected, the present management of the company having given their approval to the plan, and at an early date the matter will be formally presented to the stockholders for ratification.

A combination of persons in Arizona holding miners' liens against the property brought suit, which was defended by the counsel of the committee, and a decision obtained in favor of the committee. But an appeal has been taken from this decision, so that the litigation is not ended.

The committee would further say that the management of the company, both in New York and Arizona, has in the past lacked good business judgment, and has been unnecessarily extravagant. In Arizona, either by neglect or collusion, a superintendent acting as agent for the company permitted claims to accrue, which, in the opinion of the committee, should never have existed. The committee are now working to secure a complete change of administration of the company's affairs in Arizona, and to effect alterations in the composition of the Board of Directors for the purpose of having the company conducted on business principles. The committee believe that such a policy, if carried out, would soon restore the credit of the company, and permit the 63,400 shares of its stock held in its treasury to be sold at a proper price, for the purpose of paying off the mortgage, adding additional stamp mills and developing the property.

It will, however, take considerable time for the committee to complete their work, even if they receive the support of some of the large stockholders, who, up to the present time, have not given the assistance which the committee had a right to expect. "Signed," Sidney W. Curtis, Charles I. Hardy, Henry E. Wallace, Committee.

During the week 9400 shares of the stock sold at prices ranging from 38 to 43c.

Boston.

June 14.

[From Our Special Correspondent.]

There has been a fair amount of business in copper stocks the past week and prices have, as a rule, been well maintained. The dealings in Boston & Montana show quite a falling off, only 3500 shares changing hands, against over 13,000 last week. Early in the week the market was rather heavy, and the price dropped to $35¼, but later buying orders advanced the price to $38½@$38¾, which is a slight gain over the last week's closing. Calumet & Hecla ruled dull in early dealings, with a declining tendency, and an order to sell a lot of 15 shares at best price was offered down to $207 before finding a purchaser. After this there was a good demand for the stock, and price quickly recovered to $218; and to-day quite a large order was executed at $215.

Tamarack sold at $106 at the opening, declined to $105½, and later a small lot sold at $107. To-day the stock sold, ex dividend $3 per share, at $102½. Santa Fe has been quite active; declined to 60c., sold up to 80c., and back again to 70c., with latest sale at 72½c.

Franklin sold in a small way at $10. It is expected that a dividend of $1 per share will be paid next month

Quincy sold at $52@$53, but not active. The same may be said of the rest of the list; a few sales each of Osceola and Atlantic at $9¼, Kearsarge at $5¼, Allouez at 95c. to $1, Huron at $1¼. Bonanza at 80@85c, tell the whole story.

In the silver stocks Dunkin declined to $1; why, it is not known, unless the desire to realize on stock bought the past six months was more than the market would stand. We are advised that the mine is looking well, and the usual dividend will be declared in a few days.

Catalpa sold at 15@12½c.

3 P. M.—A dividend of $5 per share is announced by the Calumet & Hecla this afternoon, payable July 15th. The stock sold at the afternoon call at $213. Boston & Montana at $39, and Dunkin at $1.

Baltimore, Md.

COMPANY.	Bid.	Asked.
Atlantic Coal	$1.00	$1.10
Balt & N. C.	.25	.30@ .35
Big Vein Coal	....	1.50
Conrad Hill	.05	.15
Cons. Coal	.20@ .22	.24@ .25
Diamond Tunnel	.40	.50
George's Crk. C.	105	112@112½
Lake Chrome	.05	.20
North State (Balt.)	....	.30
Ore Knob	.02	.06
Silver Valley	.45@.50	...

Prices bid and asked during the week ending June 13th.

St. Louis. June 12.

[From our Special Correspondent.]

Little more can be said of the past two weeks than that transactions have been unusually small and fluctuations extremely narrow. Whether this can be ascribed to the fact that developments in the majority of cases have not been altogether satisfactory or that investors are growing a little tired of being bled, is a question rather hard to determine. That the first assertion is correct has been evidenced in many instances, notably in the Frisco, Pat Murphy, Golden Era, Yuma, and many others, but that the latter is true is more difficult to prove, as there still appears to be numbers ready to invest in any enterprise that is launched with the proper show of respectability and legitimacy. As an example, the American is the most striking. Originally taken in hand by the Messrs. O'Fallon, gentlemen of most favorable repute and sterling integrity, the prospect was developed, until now they have a mine that is said to be one of the richest in the Ouray district. A strong demand exists for the stock, and recent sales have been made at $1.40. It is said their last car-load of ore will yield in the neighborhood of $8000 to $10,000.

Of the liste properties but little can be said. West Granite was given a razzle this morning. Just why would be difficult to determine, as the property is idle and the affairs of the company in statu quo. The course of the stock ought to be downward rather than upward, yet we see little reason for its moving at all.

Frisco is dull, and while it holds its own, yielding but little to the pressure of heavy selling orders, it lacks buoyancy and offers but little inducement to the buyer.

Silver Age is strong and wanted at $5. Sales of thousand-share lots have been made within the past week at $5.

CLOSING PRICES.

	Bid.	Asked.
Adams, Colo	$ .32½	$ .42½
Anderson, Mont	.15	.20
Aztec, N. Mex	.38¾	.40
Bi-Metallic, Mont	38.00	39.50
Black Oak, Cal	.33¾	.36¼
Black Spar	.02	.02½
Bremen, N. Mex	....	.02½
Carriboo, Idaho	.13½	.14
Central Silver	.15	.25
Cleveland, Colo	.02	.02½
Concepcion, Mex	.09	.10
Dinero, Colo	.05	.06
Golden Era, Mont	.30	.32½
Go den King	.37	.40
Golden West	1.15	1.25
Gold Run	.14	.14½
Granite Mountain, Mont	47.00	47.50
Hope, Mont	3.50	4.25
Ivanhoe, Colo	.60	.65
I. X. L., Colo	.13	.13½
Jumbo, Colo	.09	.09½
Keystone	.01	.03
Little Giant	.18¾	.20
Mary Foster, Colo	.01½	.02
Major Budd, Mont	.16¼	.17½
Mexican Imp., Mex	.48¾	.50
Mountain Key	1.27	1.30
Neath, Colo	.20	.23¾
Old Colony	.16¼	.25
Pat Murphy, Colo	.33	.36¼
Phillips, Colo	.60	.63¾
Queen of the West, Idaho	.27½	.30
Rena	.04	.04½
San Francisco, Mont	.35	.37½
Small Hopes, Colo	1.15	1.30
Silver Age, Colo	4.90	5.10
Silver Bell	.26¼	.28¾
Tourtelotte, Colo	.16¼	.17½
West Granite, Mont	.77½	.78¾
Wire Patch	.30	52½
Yuma, Ariz.	.21¼	.30

San Francisco. June 14.

The assessments which were expected have made their appearance. Twenty-five cents per share has been levied on both the Sierra Nevada and the Best & Belcher on the Comstock; twenty-five cents on the Seg. Belcher and Mides Consolidated in the Gold Hill District, and fifty cents per share on Nevada Queen in the Tuscarora Camp.

The market during the past week has evinced little life. The following quotations were received to-day by telegraph to the Consolidated Stock and Petroleum Exchange: Alta, $1.35; Best & Belcher, $2 80@$3.05; Belle Isle, 20c.; Bodie, $1.20@$1.30; Bulwer, 30c.; Cons. Cal. & Va., $7⅛@$7¼; Challar. $1.80@$1.85; Crown Pt., $2 85; Eureka, $1 50@$1.60; Gould & Curry, $2.05@$2.20; Hale & Norcross, $3.35@$3.55. Mexican, $3@$3.05; Mono, $1.05; N. Belle Isle, $1.10; Nevada Queen. $1; Ophir, $4.25@$4.40; Potosi, $1.85; Savage, $1.95@$2.05; Sierra Nevada, $2.20; Union, $3; Utah, 95c.; Yellow Jacket, $3.25.

Auction Sales of Stocks.

The following securities were sold at public auction in New York this week:

20 shares Fargo Water and Steam Company	$120.00
200 shares Horn-Silver Mining Company, per share	1.15
$1,100 Neptune Mining Company 6 per cent bonds	6.00
25 shares New Jersey Phonograph Company	40.00
23 shares Welsbach Incandescent Gas Light Company, of New York, per share	3.00

Pipe Line Certificates.

[Specially reported for the ENGINEERING AND MINING JOURNAL by WATSON & GIBSON.]

It would be difficult to conceive of a duller trade in any commodity than we have seen in petroleum during the past six weeks; absolute inertia characterized it, and it does not engage the thoughts of any large speculative interest. The bulls contend that the Standard is interested in keeping down the price below 90 cents until the first of July, so that the producers will be compelled to "put" to the Standard the three million and a half (3,500,000) barrels of oil at ninety cents, which they also have the "call" of the Standard for at a lower price, and at ninety cents selling price ought to net the Producers' Association about five cents per barrel.

The Standard, it is claimed, do not desire to put up the price of petroleum prior to the first of July above this ninety cent limit, for if they did it would be largely to the profit of the producers; hence bulls argue that after the first of July the strong statistical position of Pennsylvania petroleum will assert itself in a decided bull movement. They quote the fact that there are only about 13,500,000 barrels of oil, in the shape of certificates, deliverable on the exchanges, and that this is being reduced each month by from three quarters of a million to a million barrels, and that whatever may be the future of Ohio oil, the phenomenally strong showing of the Pennsylvania statistics will compel higher prices for National Transit certificates.

The bears, on the contrary, urge the merits of Ohio oil, as large investments of capital by the Standard, the erection some time ago, in Lima, Ohio, of a large refinery, which is in active operation, and the proposed erection of a still larger one near Chicago, to treat Ohio oil, have proved that the Standard regard Ohio oil as their hope for the future, and that they are confident of their ability to successfully refine it.

The bears go on to say that if this Ohio oil, the stock of which above ground is now equal to that of Pennsylvania, can be converted into an illuminating fluid, that the fact that it now commands only 20 cents a barrel at Lima is conclusive proof that Pennsylvania oil at 85 cents or thereabouts is entirely too high, based on relative commercial values. The bears urge the low price of Ohio oil and the growing proportions of that field as a valid reason why the public will not come into a market for Pennsylvania oil at ruling prices. One thing is very sure, National Transit Certificates are either very dear or very cheap, and a radical movement in their price cannot be deferred much longer. It would be easy to bull or bear it if the right parties take hold.

NEW YORK EXCHANGE.

	Opening.	Highest.	Lowest.	Closing.	Sales.
June 8	82⅞	82⅞	82⅜	82½	18,000
10	82½	83⅜	82½	83⅜	106,000
11	83½	84¼	83½	84	241,000
12	84¼	84¼	83½	83½	115,000
13	83⅜	83⅞	83⅜	83⅞	69,000
14	83¾	83¾	83⅞	83⅜	32,000
Total sales in barrels					581,000

CONSOLIDATED STOCK AND PETROLEUM EXCHANGE.

	Opening.	Highest.	Lowest.	Closing.	Sales.
June 8	83½	83½	82½	82⅜	54,000
10	82⅜	83⅜	82⅜	83½	182,000
11	83¾	84⅜	83¾	84	377,000
12	84¼	84¼	83½	83¾	204,000
13	83½	84	83½	83⅞	113,000
14	83⅞	83⅞	83½	83¾	21,000
Total sales in barrels					951,000

Electric Stocks. June 14.

The following closing quotations are reported to-day by J. Heron Crosman, New York City:

Stocks.	Par value.	Market price.
Brush	$ 50	$60 @ $80
" Illuminating	100	70 @ 75
Daft	100	45 @ 55
Consolidated	100	70 @ 73
Edison	100	185 @ 190
" Illuminating	100	87 @ 92
Julien	100	20
" Traction	..	13 @ 15
United States	100	50 @ 60
" " Illuminating	100	50 @ 60
Westinghouse	50	53 @ 55
Thomson-Houston	..	.....
" " Welding Co.,	..	.....

The unification of all the Edison electric light companies has, it is said, been completed, the new company being known as the Edison General Electric Company, which is capitalized at $12,000,000. This company holds the stock of the various Edison companies, against which its stock and certificates of the Farmers' Loan and Trust Company are to be issued, the object being, it is said, to get rid of the complications arising by reason of the business being conducted by the several companies, although, under this new plan, these companies will not go out of existence, but each will preserve its separate autonomy.

The Thomson-Houston Electric Company has issued a circular to stockholders relating to the issue of new stock, as voted at a stockholders' meeting, April 2. The increase voted was from $1,000,000 (40.000 shares) to $3,000,000 (120,000 shares) and an issue of seven per cent $1,000,000 preferred stock in 40,000 shares of a par value of $25. Stockholders of record June 20 are given the right to subscribe to the preferred stock at par at the rate of one share of preferred for each and every three shares of common stock then standing in their names, such rights to expire June 26. Rights are transferable by assignment. Rights not used will be sold by the directors at a fair market value. Rights must be presented in lots of three or multiple thereof, and the directors have arranged for the purchase and sale at the company's office of rights on a less number of shares than three, payment for such rights to be made on the basis of $27.50 per share for the new stock, or 83⅓ cents per right. Payment for the new preferred stock must be made in cash on or before July 1, but $12 50 per share may be paid in cash on or before that date and a note be given for the balance, dated July 1, payable Oct. 1, with interest at 7 per cent, the new stock to be retained by the company as security. Transfer books will close from June 19 to 26, both days inclusive.

Trusts Stocks. June 14.

During the week ending June 15th the following sales were made at the New York Stock Exchange:

	Sales.	Price—H.	Price—L.
American Cotton Oil Certificates	90,630	$60½	$58¼
National Lead Trust	160,742	$30¾	$28⅞

A meeting of the trustees of the National Lead Trust was held this week, at which a number of the trustees banded in their resignations. W. P. Thompson, of the Standard Oil Company, was elected to fill one of the vacancies, and was subsequently elected President, but the other vacancies in the board were not filled.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, June 14.

Statistics.

PRODUCTION OF ANTHRACITE COAL for week ended June 8th, and year from January 1st.

Tons of 2240 lbs.	1889. Week.	1889. Year.	1888. Year.
P. & Read. R.R. Co.	85,733	2,478,129	2,240,207
Cent. R.R. of N. J.	120,691	2,225,309	2,089,965
L. V. R.R. Co.	143,445	2,913,833	2,369,399
D., L. & W. R.R. Co.	90,406	1,710,436	2,714,105
D. & H. Canal Co.	85,666	1,506,671	1,837,948
Penna. R.R.	30,000	1,402,231	1,813,223
Penna. Coal Co.	38,976	409,927	627,023
Penna. Canal Co.	10,000	132,862	115,780
N. Y., L. E. & W.	15,000	480,628	395,831
Total	619,917	13,260,026	14,213,481
Decrease	.....	953,455	....

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Production for corresponding period:

1884	11,702,121	1886	12,967,559
1 85	11,241,465	1887	14,568,905

PRODUCTION OF BITUMINOUS COAL for week ended June 8th, and year from January 1st:

EASTERN AND NORTHERN SHIPMENTS.

Tons of 2240 lbs.	1889. Week.	1889. Year.	1888. Year.
Phila. & Erie R.R.	*669	34,055	24,522
Cumberland, Md.	18,858	1,258,942	1,508,741
Barclay, Pa.	1,000	49,503	80,728
Broad Top, Pa.	2,000	162,370	165,959
Clearfield, Pa.	*40,886	1,263,214	1,495,183
Allegheny, Pa.	*10,754	381,817	364,305
Beach Creek, Pa.	*31,888	561,467	669,839
Pocahontas Flat Top.	22,927	648,056	631,087
Kanawha, W. Va.	*39,052	668,105	710,560
Total	168,034	5,027,529	5,650,92

WESTERN SHIPMENTS.

Pittsburg, Pa	*8,554	252,979	316,825
Westmoreland, Pa.	*20,266	616,020	694,137
Monongahela, Pa.	*7,221	99,848	146,214
Total	*36,041	968,807	1,14 1,6
Grand total	204,075	5,996,336	7,68,100

*Week ending June 1st.

PRODUCTION OF COKE on line of Pennsylvania R. R. for week ending June 1st and year from January 1st, in tons of 2,000 lbs.: Week, 75,156 tons; year, 1,867,829 tons; to corresponding date in 1888, 1,652,079.

Anthracite.

The anthracite coal trade is pretty dull at present, but it is only of a temporary nature and will undoubtedly wear off as the companies begin to recover from the effects of the recent great floods and are enabled to produce the usual amount of coal. There is

not, however, a scarcity of coal, the accumulation of stock at tide-water having prevented this, but rather a lack of demand. The individual operators purchased a large supply of coal at the low figures which have been prevalent for some time past; but as all this coal will have been delivered in a few days it may be anticipated that a brisk demand will be started. Freights are a little off, and there is considerable coal moving.

Bituminous.

Since our last report the situation of the bituminous producers has been relieved to a considerable extent. Shipments from the Cumberland District via Baltimore & Ohio Railroad and from the Pocahontas region via Norfolk & Western Railroad are moving freely. The Pennsylvania Railroad has secured rail access to its mining districts for fuel supply, which has enabled it to release the accumulated stocks at shipping ports that were held during the emergencies resulting from the great freshets. It is expected by the officers of this company that a very few days will see the resumption of the bituminous movement at tide-water via its main line. Some little delay, however, in shipments at tide-water may be looked for in view of the vast amount of freight which has accumulated during the suspension of traffic, and that will require to be moved.

There has been some talk of efforts being made to restore the Chesapeake & Ohio Canal, but it is very doubtful whether any plan can be found to place that highway again in shape for a coal traffic. Freights at Philadelphia have declined owing to the limited amount of coal offering for shipment, while freights from Norfolk and Baltimore have been fairly maintained at last figures quoted.

BALTIMORE June 13.

[From our Special Correspondent.]

The following are the latest prices in cars at Baltimore on track or in dealers' yards:

	Broken.	Egg.	Stove.	Chestnut.	Pea.
Susquehanna, W. A...	$4.25	$4.25	$4.55	$4.20	$3.00
Shamokin, free burn'g.		4.50	4.80	4.20	3.00
Lykens Valley, R. A...	4.70	4.80	5.15	4.70	3.50

Cargoes afloat 15c. per ton less than in cars.

BOSTON. June 13.

[From our Special Correspondent.]

The demand for anthracite coal is slack. Retailers have found out that they can get all the anthracite they need, and, having their apprehensions thus relieved, are as slow to order as is usually the case after an advance. Jobbers and agents seem to be practically unanimous, however, in their belief that the new prices are to be firmly maintained. There is no special demand for coal afloat, but there has been some hustling about during the past ten days to keep up with contract requirements for bituminous. The floods have caused a material curtailment of anthracite production, though not to the extent at first supposed.

Bituminous coal is still scarce at shipping ports. It is claimed here that the Pennsylvania Railroad will not do much boat traffic for two or three weeks. The other roads have suffered very much less, but all are crowded with freight and the coal business has to wait. There is so little coal at tidewater that captains have refused to charter unless the coal was on the wharf.

The pool price of $2.60 f. o. b. is now strongly held on bituminous, but there is not much new business to report.

The freight situation is not greatly changed. Lack of coal for ready shipment has reduced rates from Philadelphia to $1, and they are not likely to be materially lower this season. It will be from a week to ten days before coal begins to arrive from the Clearfield region to any extent. The steamer trade, which calls for about 2,000,000 tons per annum, is taking all the bituminous now at tidewater. New York freights are 90 cents and Baltimore $1.15. Some further reduction in these rates is anticipated.

The retail movement is small at unchanged figures. About 75 members of the trade went on the trip to Scranton They will return on Saturday. The city asks bids for 15,000 tons broken coal and a small amount of stove and egg.

The receipts of coal at this port for the week were 43,553 tons anthracite and 17,638 tons bituminous (observe the falling off). The total receipts since January 15th are 481,379 tons anthracite and 413,163 tons bituminous.

BUFFALO. June 13.

[From our Special Correspondent.]

The advance in prices of anthracite seems to have set the wheels of domestic coal commerce into operation and a good business is being done. Orders from abroad come in but slowly, but are improving in point of numbers. There are rumors that another advance may be expected July 1st. Stocks moderate.

Bituminous coal fairly active for home and nearby points. Market firm. The range of quotations for carloads per 2000 pounds on track are: Reynoldsville region, screened lump to slack, $2.10@$1.40; Pittsburgh region, screened lump, $2.30, and run of mines, $2 05; A. V. R. R & M. Co. region, screened lump, $1 90; run of mines, $1 65, and slack, $1.30; low grade of A. V. R. R region, screened lump, $2.05; run of mines, $1.80, and slack, $1.55.

Coke quiet and unchanged.

Stocks of bituminous coal moderate and only about equal to requirements at present.

There was much excitement in the Common Council last Monday. The Superintendent of Education reported bids for the hard coal necessary for the year's supplies of the public schools. Eleven proposals were at $4.75 for grate and egg and $5 for stove and chestnut per 2000 pounds delivered—the Coal Exchange schedule. Mr. C. M. Underhill put in a bid at $4.48 and $4.73 respectively. Later Mr. C. T. Hall amended his bid by reducing the figures to $4 45 and $4.70. All the parties are members of the Coal Exchange. The last proposition was not strictly formal. One of the aldermen offered a resolution that Messrs. Rochford & Burke, a firm bidding, should receive the contract at the highest figures. Then there was a general row; charges of fraud and corrupt combinations between bidders and certain aldermen (names not mentioned) were made and pandemonium was revived. Finally the whole matter was referred to the School Committee. A local newspaper says: "Disgraceful revelations have been made in connection with the case." It has been asserted by representative and reputable members of the Coal Exchange that the reference was the result of a corrupt deal between certain members of the Exchange and certain aldermen. The *Advertizer* says: "The understanding between the members of the Exchange was that all should put in bids at the prices agreed upon. But some of the dealers, not willing to allow matters to take their natural course, arranged with certain aldermen—as members of the Coal Exchange assert for a substantial consideration—to have the contract awarded to parties agreed upon. Suspecting such a corrupt combination, Mr. Underhill was authorized by some of the directors of the Exchange to put in a cut price. It was the unexpected appearance of this bid naming cut prices that prompted the presentation of the C. T. Hall communication after the bids had been opened and read." The cutting of prices is a matter between the coal dealers. The alleged bribery of the Aldermen is an affair of public interest which cannot be too highly condemned and reprobated. Further developments are awaited with considerable interest, as both the coal dealers and Aldermen's good names and reputations are involved;—and the question now is which of these parties will come out on the top of the heap?

The Tifft Farm property here, as improved by the railroad company, will be known in future as the Lehigh Canal docks and trestles Nos. 1 and 2. Unusually fast work has been done lately in loading vessels—2100 tons coal in one and three-quarter hours, and 1800 tons in one hour and forty minutes.

A rise of about four inches in the depth of water in the inland lakes and channels has enabled vessels to carry larger cargoes the past week than they have been able to do thus far this season. This increase allows 2000-ton vessels to carry about 150 tons more, thus adding a good percentage to their capacity.

Lake freights firm at unchanged quotations, with upward tendency.

The disasters in Pennsylvania have not been felt here in regard to depletion of stocks, as the supplies at the trestles and docks were very large, and they have been drawn upon to meet the emergency.

The shipments of coal hence by lake from June 6th to 12th, both days inclusive, were 74,140 net tons, namely, 32,150 to Chicago, 20,220 to Milwaukee, 9100 to Duluth, 2000 to Superior, 500 to Green Bay, 810 to Saginaw, 2800 to Gladstone, 400 to Bay City, 1970 to Racine, 800 to Manitowoc, 460 to Detroit, 1800 to Fort William, 800 to Port Huron, 40 to Serpent River, 250 to Port Clinton, 40 to Port Rowan; total for season, 454,590 net tons.

The rates of freight were 60c. to Chicago, Milwaukee, Sheboygan, Green Bay and Manitowoc; 50c. to Duluth, Superior, Ashland, Port Huron and East Saginaw; 65c to Racine; 55c to Fort William; 45c. to Marquette; 40c. to Marine City, on owner's account to Gladstone, and 25c to Detroit.

A commercial convention has been called by the Chamber of Commerce of West Superior, Wis., to be held August 6th next, for the purpose of considering the propriety of asking Congress for $10,000,000 at least for improving the water ways and channels of the inland lakes. All interested are invited to attend.

PITTSBURG. June 13.

[From our Special Correspondent.]

Coal.—The market continues to move along slowly, presenting nothing worthy of special mention. The late coal run was a very successful one. The amount forwarded to Cincinnati, 2 893 000 bushels; Louisville, 3,019,000 bushels; total, 5,912,000; this included all the coal loaded. A portion of the mines are still in operation.

The nominal rates are:

PRICE OF COAL PER 100 BUSHELS = 7600 LBS.

First pool	$4.75	Fourth pool	$3.25
Second pool	4.50	Railroad coal	5.00@6.00
Third pool	3.90		

Connellsville Coke.—The trade was less active, a combination of circumstances having tended to demoralize it. Of the 13,263 ovens in the regions, the estimated production is 97,460 tons; previous week, 103,750 tons; decrease, 6290 tons; week's shipments, 5153 cars; previous week, 6076 cars; decrease, 923 cars.

Quotations as follows per ton:

Furnace coke	$1.05@$1.10	Crushed	$1.50
To dealers	1.10@ 1.15	Foundries	1.25

Freight rates from the ovens to Pittsburg, 70c. per ton; to Shenango Valley, $1.35; Cleveland, $2.80; East St. Louis, $3.50; Chicago, $2.75.

Cut off from the Lakes.—A recent order issued by General Manager McDonald, of the Pittsburg & Western Railroad, prohibiting Pittsburg & Western cars from being loaded for points off the road, has caused a large-sized kick to emanate from Baltimore & Ohio coal shippers. They claim that it cuts them off from the lakes, and say that they will ship over the Pittsburg & Lake Erie unless the order is rescinded.

FREIGHTS.

Reduction of Rates on Iron from Chicago Eastward.—The lines leading eastward from Chicago on the 12th inst., agreed to a reduction in rates on iron to correspond with the cut on westbound shipments. The rate to Buffalo is reduced from $2.50 to $2 20 a ton; to Cleveland from $2 to $1.60; to Detroit and Toledo, from $1.70 to $1.40; to Cincinnati from $1.75 to $1.60, and corresponding reductions to minor points. These rates are to take effect June 20th and expire August 31st.

The following rates per ton of 2240 lbs. for coal charters are reported:

From Baltimore to: Bangor, 1.25; Bath, Me., 1.25; Boston, Mass., 1.15; Bridgeport, 1.00; Charleston, .85; Fall River, 1.05; Galveston, 3.50; New Bedford, 1.00; Newburyport, 1.40; New Haven, 1.00; New London, 1.00; New York, 1.00; Portland, 1.15; Portsmouth, N. H., 1.20; Providence, 1.05; Quincy Point, 1.15; Richmond, Va., .70; Salem, Mass., 1.15; Savannah, .90; Somerset, 1.05; Williamsburg, N. Y., 1.00; Wilmington, N. C., 1.00.

From New York to: Boston, .80*; Bridgeport, .60*. Fall River, .60*; Lynn, 1.10*; New Bedford, .60*; New Haven, .50; New London, .60*; Newport, .60*; Norwich, .60*; Norwalk, .50; Portland, 1.00; Portsmouth, N. H., 1.10; Providence, R. I., .60*; Salem, Mass., 1.00.

From Philadelphia to: Bath, Me., 1.15*; Baltimore, .60; Boston, 1.15*; Charleston, .75; Chelsea, 1.20*; East Cambridge, 1.15*; Fall River, .80@.90*; Georgetown, D. C., .85†; Gloucester, 1.10*; Lynn, 1.30*, New Bedford, .80@.90; Newburyport, 1.15@1.20*; New York, .90†; Norfolk, Va., .55; Portland, 1.15*; Portsmouth, N. H., 1.10*; Providence, .80@.90*; Richmond, Va., .60; Salem, 1.05*; Savannah, .90; Washington, .85.†

* And discharging. † Alongside.

METAL MARKET.

NEW YORK, Friday Evening, June 14, 1889.

Prices of silver per ounce troy.

Jun.	Sterling Exch'ge.	Lond'n Pence.	N. Y. Cts.	Jun.	Sterling Exch'ge.	Lond'n Pence.	N. Y. Cts.
8	4.88½	42⅛	92¼	12	4.88½	42	91⅞
10	4.88½	42 ⅛	92⅛	13	4.88½	42	91⅞
11	4.88½	42 1-16	92	14	4.88½	42 1-16	92

Silver has been heavy and dull this week, without special feature.

Council bills declined 1-32d. per rupee on Wednesday.

United States Assay Office at New York reports total receipts of silver for the week 74,000 ounces.

Foreign Bank Statements.—The governors of the Bank of England at their weekly meeting made no change in the minimum rate for discount, which remains at 2½ per cent. During the week the bank gained £248,000 sterling bullion, and the proportion of its reserve to its liabilities was raised from 40·77 to 42·63 per cent, against an advance from 41·21 to 42·50 per cent in the same week last year, when its rate for discount was 2½ per cent. Thursday the bank gained £300,000. The weekly statement of the Bank of France shows a gain of 19,725,000 francs gold and a loss of 1,100,000 francs silver.

Domestic and Foreign Coin.

The following are the latest market quotations for American and other coin:

	Bid.	Asked.
Trade dollars	$ .73	$ —
Mexican dollars	.73¼	.73¾
Peruvian soles and Chilian pesos	.72½	.73½
English silver	4.85	4.89
Five francs	.94	.95
Victoria sovereigns	4.87	4.89
Twenty francs	3.90	3.93
Twenty marks	4.75	4.80
Spanish doubloons	15.60	15.75
Spanish 25 pesetas	4.80	4.85
Mexican doubloons	15.55	15.70
Mexican 20 pesos	19.50	19.65
Ten guilders	3.96	4.00

Copper.—No important change can be reported in the general situation during the week just past, but trading has been decidedly more active and deliveries of both lake and casting copper are going on at a very satisfactory rate.

For a considerable time past exports of Lake copper have been absolutely nil, but we notice a shipment during the last few days of about 25 tons per S.S. "Chateau Lafite" to Bordeaux.

Quotations are unaltered as far as concerns Lake copper, but casting descriptions can now be bought at from 10 70 to 10 75.

During the week the London market for Chili bars and G. M. B.'s has rather eased off, and to-day's closing quotations are £41 to £41 2d. 6s. spot, and £40 15d. to £41 3 months prompt. Refined sorts are firm at £45 for tough, £46 to £46 10d. for best selected, £48 to £49 for India sheets, £52 to £53 for strong sheets, and 4¾d. per lb. for yellow sheets.

Messrs. James Lewis & Sons report, under date of Liverpool, June 1st, 1889, as follows:

The moderate quantity of Chili Bars and good merchantable copper offered for sale out of the very large stock sustained the value at £38 2s 6d.@£39 15s. until the 27th ulto., when large purchases of three

months' prompt by one firm caused an advance to £41 15s. for this prompt, and £42 for cash. From this point, values declined to £41 on the 30th, and at the close of the market yesterday there were buyers of cash at £40 15s., and of three months at £40 10s., sellers asking 2s. 6d. more.

Large sales of Furnace Material have been made to smelters, including 5335 tons of Anaconda matte at 8s.@7s. 10½d. per unit.

The negotiations between the French holders of warrants—stated to represent a stock of 170,000 tons—and the larger producers were broken off for a time, but an agreement having been reached with the chief American companies, with the exception of the Tamarack (the present production of which equals about 6000 tons per annum), the official liquidator of the Comptoir d'Escompte visited London on the 28th ulto., but so far his interviews with the representatives of the mining companies located there do not appear to have led to any satisfactory result, as it is understood that some of the companies decline to be parties to any fresh combination to advance prices and reduce production.

For English and manufactured copper there has been a good demand, and during the last few days upwards of 1000 tons of India sheets and 600 tons of yellow metal have been sold.

The public stocks have decreased 2549 tons, and the visible supply 5112 tons during the past month, and now amount to 119,176 tons.

Imports are 5995 tons less and deliveries 2078 tons more to date than during the same period last year.

The arrivals in England from Chili during the month have been 3790 and the deliveries 4678 tons Fine, and from other countries 4765 and 5073 tons fine respectively, while 563 tons of G. M. C. have been delivered.

The arrivals in Liverpool and Swansea from the United States have been 2054 tons matte (including 1799 tons Anaconda), and 160 Ore, equal to about 1239 tons fine copper, and in France nil.

The Chili charters for the first half of the month were advised as 600 tons, those for the second half are not yet to hand, but we estimate them at 1000 tons, making the total for the month 1600 tons.

Tin.—Prices are lower and some sales have been made for July and August at 20·20, but afterwards the feeling became somewhat firmer and the closing quotations to-day are: spot, 20·35; July, 20·40; August, 20 40.

The London market has also been on the decline, and prices there have fallen to £90 5s. @£90 7s. 6d. for spot, and £91@£91 5s. three months.

Lead.—The market has been rather irregular during the week. From 4c. (the closing price of last week) quotations declined to 3·90 on small sales, but subsequently rallied again, and the closing to-day is strong at about 3·95 spot and 3·97½ August. Offerings continue light, and most of the smelters are evidently holding back.

Chicago.—Messrs. Everett & Post telegraph us to-day as follows: This market is quiet and lower. Absence of buyers is affecting a decline. Sales during the week have been light. At the close 3·85c. is asked, and 3 80c. bid.

St. Louis.—Messrs. John Wahl & Co. telegraph us to-day as follows: Market does not reveal any activity, but, on the other hand, shows no sign of weakness, holders having quite frequent inquiries for small lots, maintaining prices pretty well. Sales for the week sum up about 300 tons, at an average from 3·75 to 3·80c. for chemical or corroding.

Spelter is higher in price. Some sales have taken place at 5c. New York, and more is now asked. The metal is somewhat scarce.

Antimony.—The recent important rise in values it fully maintained and higher prices are again obtainable. We quote to-day Hallett's, 13¾@14; Cookson's, 15¼@15½.

Quicksilver.—The receipts of quicksilver at San Francisco for May and the first five months of the year were as follows:

	For May.	Jan. 1 to May 31
1887, flasks	2,017	9,955
1888, "	2,584	12,021
1889, "	939	6,009

The product this year to date, as indicated by the receipts, is only about 50 per cent of last year, and 66 per cent of 1887. It is probably owing to the diminished yield that the price rose from $40.50 at the beginning of May to $47.50 at the close of that month. The exports by sea from San Francisco last month were the lightest in a long time, consisting of only 76 flasks, including 63 to Mexico, 10 to New Zealand and 3 to British Columbia. The exports for the five months ending May 31st, 1889, were as follows:

	Flasks.	Value.
New York	430	$18,000
Australia	10	425
New Zealand	15	608
Central America	1	41
Mexico	2,012	83,791
British Columbia	10	421
Totals	2,478	$103,286
In 1888	6,832	273,776

Last year New York took 2020 flasks, Hong-Kong 1010 flasks, Mexico 3388 flasks, and Central America 240 flasks. China has drawn all its quicksilver from London this year. Mexico must also be using more foreign quicksilver this year.

Mr. J. B. Randol gives us the following statement of the quicksilver production in California in the month of May, 1889:

Mines.	Flasks.
New Almaden	870
Napa Cons.	416
Sulphur Bank	185
Bradford	127
Great Eastern	111
New Idria	70
Various	30
Total	1809

IRON MARKET REVIEW.

NEW YORK, Friday Evening, June 14.

Pig Iron.—There has been no further improvement in prices or in the situation in this market during the past week, but a rather cheerful feeling is still apparent, and if there has been no advance there has assuredly been no retrocession. Northern furnaces uniformly report that they are well sold up, and their deliveries continue heavy. Southern brands are moving freely, but in the aggregate transactions have not been so large this week as last.

Prices continue firm at $16.50@$17.50 for No. 1, $15.50@$16.50 for No. 2, and $14 50@$15.25 for Gray Forge. Southern makes sell at about fifty cents per ton below these figures.

Spiegeleisen is moving in a quiet way at $28.50 for English 20 per cent. Ferro-manganese, 80 per cent, is stiffer on account of higher advices from abroad. We get quotations ranging from $58 to $61. Spot supplies are very light.

Steel Rails.—There has been a marked improvement in this department of the iron market. Eastern mills now refuse to quote lower than $27.50 at mill, and the West adheres to $28 per ton. A much-quoted authority at the head of an Eastern company estimates that within the past three weeks 100,000 tons of steel rails have been sold by Eastern mills. However this may be, it is a fact that some of the mills have obtained an additional allotment of 20,000 tons from the Board of Control, as they claimed they had sold the full amount of their former allowance. As an illustration of the general improvement, we learn from advices just received in New York that a sale of 5000 tons at $28 has been consummated this week in Philadelphia.

Here, the actual sales during the week have not been large, but the inquiry has been steady, and it is understood that a number of important contracts, which will probably be soon placed, are now in the market. Despite the apparent apathy of Wall street toward railway investments, a number of new enterprises are now under way, it is said, with good prospects of early completion. In the growing sections of such a country as this, the extension of railway systems soon becomes imperative, and there is no reason to suppose that the present year will not have its fair share of railway construction.

Structural Material.—In anticipation of a large demand from the devastated districts of Pennsylvania and Maryland to replace the bridges and trestles destroyed by the recent storms, sellers have assumed a more independent attitude. The demand from these sources, however, has not yet been generally felt among New York houses, and while a firmer feeling is manifest, prices are not quotably changed. In this vicinity comparatively little new work has been contracted for during the past of week. Out of town and throughout the State considerable inquiry is reported A large amount of iron-work for the Syracuse City Hall will probably be taken by Milleken Bros. The iron-work will probably be worth in the neighborhood of $55,000.

Wire Rods.—Foreign rods are still quoted at $42.50 @$43, in sympathy with the recent rise in the foreign market.

Bar Iron.—Business in this line is reported rather quiet, but in anticipation of the annual adjustment of the wages scale in July, which is liable to cause temporary stoppages at some of the mills, commission houses are carrying larger store stocks than usual. We quote for refined at mill 1·70c., and 1·60c. for common. From store in New York the quotations are 2c. for refined and 1·70c. common.

Merchant Steel is firmer, particularly for the lower grades, but so far as can be learned no important business has been transacted at figures higher than our former quotations, which will be found in full in our register of current prices.

LOUISVILLE. June 10,

[Special Report by Messrs. HALL BROTHERS & Co.]

There has been more business for the past week than for some little time, though at a very low range of prices. Several orders have been placed for quantities ranging from 200 to 500 and 1000 and 2000-ton lots, and quite a number of carload orders, so the week's business foots up well in the aggregate. Such prominent brands as Sloss are sought after with avidity. There are a number of round orders in contemplation which may be closed at any time and will swell the total of the week's business several thousand tons. There is no improvement to note in the range of prices over last week; they will be found in our weekly register of prices.

PHILADELPHIA. June 15.

[From our Special Correspondent.]

In many respects the improvement which has come upon the iron market within the past few days was unexpected. The upward tendency in prices is quite general. Two or three weeks ago there was an anxiety to book large orders for forward delivery. Just now that anxiety has fallen off unless buyers are willing to pay certain advances. There is a better feeling all around, both in crude and finished material. The volume of business for the past six days is about double that of the previous six days. The number of inquiries have very greatly increased. The hardening tendency at work is surprising both large and small buyers. Manufacturers and brokers representing manufacturers are now reminding their customers of their warnings of a month ago. There is very little shading of prices going on. At the same time consumers are not taking fright and hurrying in. Up to this time only legitimate and urgent requirements are being met. The reason of this is that buyers generally feel that the producing capacity of the country is fully sufficient to take care of them, and that any upward tendency would probably be followed by a reaction. So far as pig-iron is concerned it would not be straining the facts to say that standard irons are selling at about twenty-five cents per ton more than they were a week ago. A good many inferior brands are still offered and selling at old prices. It would take very little to give prices an upward turn. Southern pig-iron is being more freely offered. Persons making inquiries find holders very firm, but when it comes to the point of losing a customer we hear of a little yielding here and there, which shows that the market has not yet taken a decided stand. Makers know that consumers are very low in stocks everywhere, and are for the most part willing to book orders only at full prices. Special brands are very firm. If there is any tendency to give way it is in inferior brands, which, as heretofore, are not very largely wanted. Nail, tank and shell slabs are in much more active inquiry, but up to this time no very large orders have been placed. There are several inquiries in to-day for charcoal blooms. Muck bars have suddenly advanced fully a dollar. Some makers, who have secured large orders, are asking figures which buyers would not think of paying. Some makes sold this week as high as $28, but this does not represent the regular price. Bar iron is selling better than it has at any time for some weeks, and if Eastern makers could control their own territory prices would advance fully one-tenth above what they are. Outside iron is unsettling business to some extent. The mills South are still anxious for business, and, therefore, are inclined to yield as much as possible. Buyers are more careful to specify as to quality. Nails are somewhat stronger than last week, and about 10 cents per keg additional is paid for ordinary lots. Skelp iron is strong at quoted rates, and in view of the improving demand for wrought-iron pipe several large contracts are likely to be closed on Saturday. The greatest activity is shown in plate and tank material of all kinds, both iron and steel. Specifications have been arriving every day this week, and there is a good deal of activity in the iron offices. Urgent buyers of tank are paying in some cases 2 cents for early deliveries. Universal plates, 2·10c. A good many specifications have been arriving this week for bridge plate. The extent of these requirements are unknown, but railway engineers say that it is the intention of the companies to restore the destroyed bridges just as soon as the material can be had. Contracts for several thousand tons will be placed before the first of August. These statements give rise to rumors that there will be an advance on all kinds of structural irons To-day's reports from all the sheet iron mills show that trade conditions are still improving. Not only are immediate consumptive requirements stronger but work for August delivery is pressing. Steel rails are quoted strong at $27.50 to $28. Two or three good round lots were placed this week, and it is stated with a good deal of confidence by makers that $28 will be the inside figure before long. Old rails are taken at $22.50. One or two lots of steel rails were sold at $16@$17 for old. The demand for scrap iron is once more setting in quite actively, and all kinds, from car load down to borings, are moving out of yards. The situation has decidedly improved, but capacity is too heavy to allow anything like a boom to take the trade by surprise.

The new steel rail allotment will not last very long according to street rumors.

PITTSBURG. June 13.

[From our Special Correspondent.]

Raw Iron.—Last week we had a dull and very unsatisfactory market, but apparently with the price of raw iron on the up grade. Taking the season of the year into consideration the sales this week are large, proving conclusively that when we stated that stocks in the hands of consumers were unusually light, and that if they continued to run their mills they would soon have to enter the market for stock, we merely stated the fact and knew what we were talking about. Among our sales will be found 2250 tons gray forge at $13.85 cash, the purchaser offering the same price for 1000 tons additional, which was refused. Sales, 2000 tons Bessemer, $15.95 cash. The buyers wanted 1000 tons more at the same price, the holder demanding more money. Another broker sold 3700 tons gray forge, the largest portion being at an advance on last week's figures. The demand for pig is on the increase for round lots. The chances are that a good deal of iron will change hands Of course there is, and always will be, a difference of opinion in regard to the present and future of iron. Buyers are now anxious to invest at prices current two or three weeks ago. Holders, however, have changed their views, contending that prices are

yet too low. Pittsburg prices are over $1 per ton below Eastern or Southern men, hence there is no danger of competition from those markets. There are a number of furnaces in this vicinity that are out of blast, the owners of which have been and will be liberal buyers until their furnaces are put in operation. Taken as a whole, the market indicates that the lowest price of raw iron was reached some two weeks ago—that the longer buyers defer making purchases the more money will be required to buy.

Coal and Coke Smelted Lake Ore.

2000 Tons Bessemer	15.75 cash.
1500 Tons Bessemer	15.65 cash.
1000 Tons Gray Forge	13.65 cash.
1000 Tons Bessemer	15.75 cash.
3000 Tons Bessemer	15.65 cash.
1250 Tons Gray Forge	14.00 cash.
2250 Tons Mill Iron	13.85 cash.
1000 Tons Bessemer, June	15.95 cash.
200 Tons No. 1 Foundry	16.50 cash.
200 Tons No. 2 Foundry	15.25 cash.

Coke, Native Ore.

1000 Tons Gray Forge	13.85 cash.
700 Tons Gray Forge	14.00 cash.
1000 Tons Gray Forge	13.85 cash.
1000 Tons Gray Forge	14.00 cash.
100 Tons Gray Forge	14.00 cash.
175 Tons Silvery	15.50 cash.
75 Tons Extra Silvery	19.00 cash.

Muck Bar.

1000 Tons Neutral, July	26.25 cash.
1275 Tons Neutral, July	26.00 cash.
1000 Tons Neutral	26.35 cash.

Steel Slabs and Billets.

2000 Tons Billets	27.50 cash.
1000 Tons Billets	27.50 cash.
1000 Tons Billets	27.25 cash.
500 Tons Slabs	27.65 cash.

Bloom Ends.

1000 Tons Bloom Ends	18.00 cash.

Ferro-Manganese.

400 Tons 80 per cent	60.00 cash.

Skelp Iron.

500 Tons Sheared, per 100 lbs	1.92½ 4 mo.
500 Tons Ground, per 100 lbs	1.65 4 mo.

Steel Wire Rods.

750 Tons American Fines	41.25 cash.

Speigel.

80 Tons 20 per cent	30.00 cash

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, June 14

Heavy Chemicals.—The situation in this market affords little encouragement to those who are hoping for higher prices and increased activity. With the exception of refined alkali and carbonated soda ash in small lots, everything embraced under the head of "heavy chemicals" is moving more or less sluggishly. The principal weakness of the market, however, is in caustic soda and bleaching powder. Both of these articles are offered without finding very many buyers at prices which are claimed to be unpleasantly near the cost of the same to the seller.

The consumption of bleaching powder seems to be decreasing. This is no doubt due to the fact that owing to the growing use of wood pulp and other materials in the manufacture of paper, bleach is now a less important factor than heretofore. The chlorine processes or "electrolytic bleaching" promise also to take its place in some cases. One feature of the present depressed condition of this market is that it has apparently stopped importations on speculation; in other words importers are unwilling to bring anything over unless it has been actually sold before arrival. Occasionally, however, they get caught with a small lot on the dock, and rather than incur the expense of putting it in store, they offer to sell it at very low prices. This illustrates the weakness of the market.

Liverpool advices received this week reveal little worthy of record, save that the makers have not yet decided upon any definite plan of restriction of production.

With the advent of the summer season, the outlook does not improve, and it naturally will not unless some relief at primary points is devised. The glass makers' fires will soon go out, and during the summer months work at nearly all factories is usually relaxed.

Caustic soda is still quoted at 2·10@2·15c. for all the higher tests. A few drums of 60 per cent have been sold this week at 2·37½c. but as the spot supply is limited, it is doubtful if anything more can be purchased at this figure. In a large way for shipment 2·30c. is quoted.

Bleaching powder is quoted very low for large orders, but very little, if any, business of an important nature has been actually consummated during the past week. For large quantities we get the quotation of 1·50c. In a jobbing way the quotations range from 1·60@1 75c., according to quantity.

Carbonated soda ash, 48 per cent, is selling in moderate quantities at 1·20@1·25c. Small lots are quoted at 1·32½c. Caustic soda ash, 48 per cent, is quiet at 1·25c. on the spot. Refined alkali is in good demand at 1·22½@1·25c., for 48 per cent, and 1·12½@1·17½c. for 58 per cent. Hyposulphite of soda is offering at 1·42½@1·55c. in casks and 1·55@1·75c. in kegs.

Acids.—Very little fresh news concerning this market can be reported this week. Judging from the statements of a majority of those engaged in it, the trade is now in a more satisfactory condition than at any time for some months past. Prices have not materially improved, but there seems to have been a freer and more liberal consumption which has offset any accumulation of supplies. Acetic acid has been sold in small lots at 2c. Oxalic is dull at 9½@10½c. per lb. according to quantity for prime English and German makes ex store or dock, New York, Boston or Philadelphia. Nitric and muriatic acids are in fair demand at unchanged prices. Sulphuric is still moving freely. The market is devoid of interesting news items.

Fertilizing Chemicals.—A large number of contracts for crude supplies for the fall season have been placed during the week. Prices are steady and the market displays no decided tendency either up or down. Supplies on the spot are not large enough to cause much depression, and, on the other hand, there is sufficient material here to meet all current requirements. We continue to quote as follows: Azotine, $2.40; dried blood (city), low grade, $2.35@$2 40 per unit; Western high grade, $2 40@$2.45 per unit for ground material; tankage, high grade, $25@$26 per ton; low grade, $23@$24 per ton, as to quality. Fish scrap, $25 per ton, f.o.b. factory. Sulphate of ammonia, $3.12½@$3.15 per cwt.

Refuse bone-black, guaranteed 70 per cent phosphate, $19@$20 per ton. Dissolved bone-black is 95c.@$1 per unit for available phosphoric acid, and acid phosphate 80c. per unit for available phosphoric acid.

Steamed bones, unground, $20@$24; ground, $24@$25.

Charleston rock, undried, $5 50 per ton; kiln dried, $6 50 per ton, both f.o.b. vessels at the mines. Charleston rock, ground, $10.50@$11, ex steamer at New York.

Muriate of Potash.—Arrivals aggregating 200 tons are reported. The demand is steady, but has not increased from former proportions. We continue to quote 1·80c. for both spot and arrivals.

Double manure salts is quoted at 1·20c. spot and 1·15c. to arrive on a basis of 48 per cent potash. High grade manure salts, containing 90 per cent potash, are quoted at 2·35c.

Kanit—Spot supplies are limited, and the greater part of the next two or three cargoes has been sold to arrive. Spot quotations are more or less nominal. For shipment, we continue to quote the syndicate figures, $9.75 per ton by foreign invoice weight, and $10 per ton by actual weight.

Brimstone is rather weaker. Very light transactions are reported. The latest quotations are $20 for best unmixed seconds on the spot, and $19 for the

IMPORTS AND EXPORTS OF METALS AT NEW YORK MAY 25 TO JUNE 1, 1889, AND FROM JANUARY 1

IMPORTS.

Spelter.	Week. Tons.	Year. Tons.
Amer. Metal Co		67
Hendricks Bros		28
Lamarche's Sons, H.	1	6
Naylor & Co	5	66
Total	6	139
Corres. date, 1888		313

Nickel.	Lbs.	Lbs.
McCoy & Sanders		11,240
Total		11,240

Antimony.	Casks.	Casks.
Total	50	1,358
Corres. date, 1888	50	1,423

Pig Lead.	Lbs.	Lbs.
Caswell, E. A		10
Erie Dispatch		9
Foley, E		43
Henderson Bros		11
Hendricks Bros	11	67
Total	11	140
Corres. date, 1888	100	200

Tin.	Tons.	Tons.
Amer. Metal Co		402
Bidwell & French		351
Bruce & Cook		14
Carter, Hawley & Co		46
Cohn & Co., H	1	12
Crooks & Co		172
Daval & Son, John		21
Hendricks Bros		128
Knauth, N. & Kuhne		10
Lehmarer, S. & Co	14	78
Mendel & Tompkins		1
Muller, Schall & Co		917
Naumann, F		1
Naylor & Co		1,166
Phelps, Dodge & Co		1,597
Pope, J. E., Jr	23	225
Schmarer & Co		11
Thomsen, A. A		151
Thomsen, D	15	146
Townsend, J. R		122
Wheeler & Co		1
Total	53	5,608
Corres. date, 1888		3,914

Tin Plates.	Boxes.	Boxes.
American Metal Co		44
American Metre Co	44	343
Brown & Co., V. H		350
Bruce & Cook		48,182
Byrne & Co., J		8,392
Central Stamp. Co	846	44,277
Coddington & Co	3,848	80,534
Cohen, S. M		272
Cohn & Co., H	237	7,322
Con. Fruit Jar Co		786
Cort & Co., N. L	11,226	65,593
Corbier, F. & S	351	1,806
Crooks & Co	959	48,292
De Mitt & Co	3,151	19,500
Dickerson, V. D	2,987	160,739
Downing & Co		231
Erie Dispatch		222
Foley, E		39
G. L. N	3	75
Holder & Herrick		271
Iron Clad M. Co		283
Ismay, J. B		500
Lalance & G	3	6,155
Lazard Bros		2,356
Lombard, Ayres		3,000
Merchant & Co	941	8,221
Mersick & Co	866	5,641
Morewood & Co		7,030
Mulholland & H		767
Newell Bros		150
Payne & Son		208
Phelps, Dodge & Co	12,169	286,672
Pratt Mfg. Co		104,973
Sanders Bros		479
Shepherd & Co		14,985
Somers Bros	478	1,048
Taylor Co., N. & G		322
Thomsen, A. A	125	102,491
Warren & Co., J. M		3,434
Wheeler & Co	1,472	10,390
Whittemore & Co	3,457	18,013
Wolff & Reesing		2,532
Total	43,166	1,037,991
Corres. date, 1888		629,245

Pig Iron.	Tons.	Tons.
Bartlett, N. S		500
Crocker Bros	466	3,386
Crooks & Co		500
Henderson Bros		166
Godwin & Son, A. G		390
Irvin & Co., R		100
Martin, W. T		150
Naylor & Co		50
Page, Newall & Co		60
Perry & Ryer		125
Pierson & Co		500
Pope, J. E., Jr		250
Sheldon & Co., G. W		200
Stetson & Co	400	3,200
Walbaum & Co	25	275
Williamson & Co	75	1,500
Total	966	11,202
Corres. date, 1888	351	2,797

Steel Sheets, Billets, Forging, etc.	Tons.	Tons.
Abbott & Co		2,450
Ames, W. T		253
Baldwin Bros. & Co		15
Belcher, H. W		95
Boker, C. F		131
Carey & Moen		118
Carter, G. F		200
Coddington & Co		24
Crenshaw, Hugh		27
Crooks & Co		292
Cortis, R. J		408
Curran, J		5
Dana & Co	1,135	10,605
Downing & Co		171
Erie Despatch		40
Galpin, S. H		497
Hugill, Chas		95
Ismay, J. B		174
Lalance, & G		106
Lazard Bros		6
Leng's Sons, J. S		114
Lublin & Estey		7
Lundberg, G		51
Mersick & Co		5
Milne & Co		1,557
Montgomery & Co		5
Naylor & Co	266	2,710
Newton & S		35
Oelrich & Co		389
Pierson & Co		323
Pilditch, F. S		75
Power, C. W		36
Prosser, Thos		496
Roebling's Sons		112
Schulze & R		13
Standard Oil Co		222
Stetson & Co		11
Strouse & Co., M		25
Temple & L		15
Wagner, W. F		373
Wallace & Co		5
Wetheral Bros		2
Whitney & W		30
Wiel Elie		44
Wiell & Co		7
Williams & W		95
Wolff, R. H		347
Total	1,401	22,826
Corres. date, 1888		4,342

Bar Iron.	Tons.	Tons.
Abbott & Co., J		850
Bacon & Co	220	307
Downing & Co	276	519
Jacobus, E. G		17
Milne & Co	271	360
Muller, Schall & Co	565	575
Naylor & Co	136	186
Ogden & W		7
Page, N. & Co	732	886
Plenty, John		2
Troment, F		440
Wells, F., & Co		15
Total	2,200	4,069
Corres. date, 1888	80	1,998

Steel and Iron Rods.	Tons.	Tons.
Abbott & Co., J.	467	1,718
American S. Co	101	651
Bacon & Co	206	256
Boker, H	17	20
Bruce & Cook	12	20
Carey & Moen	1	431
Cooper, H. & Co		40
Crabb & Co., W		17
Dana & Co		1,915
Downing & Co		690
Fuller, D. & T	4	15
Galpin, S. H	644	1,045
Hazard Mfg. Co		20
Heyn, A		1,151
Lillienberg, N		56
Lundberg, G		56
Lundell, C. G	196	246
Milne & Co	281	592
Montgomery & Co	20	36
Muller, Schall & C	126	328
Naylor & Co	943	8,894
Nichols, B. J		10
Page, N. & Co	250	524
Pratt Mfg. Co		30
Roebling's Son	300	1,069
Wheeler & Co., E. S		120
Whitney & Co	510	580
Williams & W		5
Wolf & Co		2,455
Wright P. & Co		3
Total	4,078	23,756
Corres. date, 1888	547	23,538

Old Rails.	Tons.	Tons.
Baldwin Bros. & Co		240
Bowring & A		57
Crossman & Bro		1,298
Henderson Bros		150
Neumark & Gross	2,929	6,115
Perkins, C. L		433
Perry & Ryer		177
Sheldon & Co		203
Ward & Co., J. E		21
Total	2,929	8,664
Corres. date, 1888		5,602

Scrap Iron.	Tons.	Tons.
Burgass & Co		162
Downing & Co		321
Funch, E. & Co		397
Neumark & Gross	500	500
Spaulding & Co		172
Ward & Co., J. E	160	429
Watjen, F. & Co		152
Total	660	2,133
Corres. date, 1888	70	2,102

Sheet Zinc.	Lbs.	Lbs.
Crooks & Co		441,814
Lemarch's S's, H		1,554
Total		443,368

Sheet Iron.	Tons.	Tons.
Coddington & Co		456
Downing & Co		16
Kelly, Hugh		5
Total		477
Corres. date, 1888	30	626

Charcoal Iron.	Tons.	Tons.
Bacon & Co		97
Downing & Co		671
Lillienberg, N		6
Milne & Co		94
Muller, S. & Co		135
Naylor & Co		45
Page, N. & Co		754
Total		1,802

Spiegeleisen.	Tons.	Tons.
Abbott & Co	820	1,571
Blakely & McLellan	999	3,100
Crocker Bros		7,222
Dana & Co	370	4,876
Farris & Co		325
Geisenheimer & Co		85
Jansen, J. A	960	9,070
Naylor & Co	541	8,730
Perkins, C. L		1,401
Walbaum Bros		675
Total	3,690	37,458
Corres. date, 1888	1,230	19,168

Iron Ore.	Tons.	Tons.
Earnshaw, A		4,971
Total		4,971
Corres. date, 1888	1,935	12,125

EXPORTS.

Copper.	Pounds.	Pounds.
Abbott & Co		463,109
Amer. Metal Co		697,256
Hurst, F. W. J		113,000
Naylor & Co	37,476	1,234,500
Orford, C. & S Co		112,013
Piper, D. & Co		3,898
Seaman, Sam'l H		141,800
Total	37,476	2,765,570
Corres. date, 1888		18,076,885

Copper Matte.		
Abbott & Co		427,613
Amer. Metal Co		3,101,170
Am. & Paterson	54,280	198,500
Clark, W. A		879,019
Henriott, F		5,083,269
Seaman, Sam'l H		13,000
Williams, Terhune		692,494
Total	54,280	10,385,063
Corres. date, 1888		22,375,111

Old Copper.		
Burgass & Co		32,470
R. J. Cortis		34,100
Total	34,100	66,570
Corres. date, 1888		181,695

CURRENT PRICES.

These quotations are for wholesale lots in New York.

CHEMICALS.

Acid—Acetic, ℔ 100 lbs..... 2.00
Muriatic, 18°, ℔ 100 lbs ... .. 1.10@1.20
Muriatic, 20°, ℔ 100 lbs..... 1.35@1 50
Nitric, 36°, ℔ 100 lbs ... . 4.00@5.50
Nitric, 42°, ℔ 100 lbs..... 5.50@7.00
Oxalic, ℔ 100 lbs..... .9.50@10.50
Sulphuric, 60°, ℔ 100 lbs. ..... 90@95
Sulphuric, 66°, ℔ 100 lbs ..... 95@1.25
Alkali—36 p. c..... .. .. 1.20 @1.25
Refined, 48 p. c .....1.22½@1 25
Refined, 58°..... 1.15@1.20
Alum—Lump, ℔ lb..... .. ... 1¾
Ground, ℔ lb .... 1¾@2
Lump ℔ ton, Liverpool £4 17 6
Sulphate of Alumina, ℔ ton....£4 10
Aqua Ammonia—18°, ℔ lb..... 4¾
20°, ℔ lb..... 6
22°, ℔ lb . .. . 6@7
26°, ℔ lb..... 10@11
Ammonia—Sul., ℔ 100 lbs. 3.12½@3.15
Carb., per lb..... 7½@8½
Muriate per lb..... 6½@ 8
Arsenic—White, powdered, ℔ lb...3@3½
Red ℔ lb ..... 7@8
White, at Plymouth, ℔ ton. ..£12 2 6d.
Asbestos—Am., p. ton.....$50@$100
Italian, p. ton, c. i. f. L'pool..£18@£80
Asphaltum—P. ton 13.00
Prime Cuban, ℔ lb ... . 4½@5½c.
Hard Cuban, ℔ ton..... ... ... $28.00
Trinidad, refined, ℔ ton..... $30.00
Barytes—Sulph., Am. prime white 16@20
Sulph., foreign, floated, p. ton....20@21
Sulph., off color, p. ton 13.00
Carb., lump, f.o.b. L'pool, ton £6
No. 1, casks, Runcorn " "£4 10 0
No 2, bags Runcorn " " 3 15 0
Bleach—Over 35 p.c., ℔ lb..... .. 1·60
Borax—℔ lb 9¼
Refined at Liverpool, ℔ ton.. ....£29
Brimstone—*See Sulphur.*
Bromine—℔ lb..... ..... 37@38
Chalk—℔ ton... ... . 3.25@3.50
Precipitated, ℔ lb. ..... 4¾@5
China Clay—English, ℔ ton13.50@18.50
Southern, ℔ ton 13.50
Chrome Yellow—℔ lb..... .... 1·@25
Cobalt—Oxide, ℔ lb..... ..2·60@2·90
Copper—Sulph. English Wks.,ton..... £24
Precip., Eng. Wks, unt... fluctuating
Copperas—Common, ℔ 100 lbs.52@57½
Best ℔ 100 lbs..... .. ....75@1.00
Liverpool, ℔ ton, in casks.....£1 15s.
Cream of Tartar—Am. 99%....24@24¼
Powdered, 99 p c .... 24¼@25½
Emery—Grain, ℔ lb .. .. 4½@5
Flour, ℔ lb .... 2¾@3½
Feldspar—Ground, ℔ ton.. . ..15·00
Fuller's Earth—Lump, ℔ bbl. .90@95
Powdered, ℔ lb . .. . 1⅞@2
Gypsum—Calcined, ℔ bbl. 1.25
Iodine—Resublimed..... 3.50
Kainit—℔ ton..... .... 9.75@11.00
Kaolin—*See China Clay.*
Lead—Red, ℔ lb. .... 6¾@7
White, American, in oil, ℔ lb... 6¾@7¼
White, English, ℔ lb ... .8½@8¾
Acetate, or sugar of..... 12@13
Lime Acetate—Amer. Brown. .95@1.00
" Gray1.75@1 87½
Litharge—Powdered, ℔ lb. ... .6½@6¾
English flake, ℔ lb..... .....6@6½
Magnesite—Greek, ℔ ton..... ....20 00
Manganese—Crude, per unit ...23@ 28
Oxide ground, per lb ..... 2½@6½
Mercuric-Chloride—(*Corrosive sublimate*) ℔ lb..... ... 64@66
Mineral Wool—℔ lb..... 2
Mica—In sheets according to size, 1st quality, ℔ lb..... .....25@$6 00
Phosphate Rock—S. Carolina, per ton ... o. b Charleston. 5.25@6.00
Ground, ex vessel New York. 11.00
Canadian Apatite, lump, f. o. b. at Montreal ℔ ton 16 00
Phosphorus—℔ lb..... .... 70@75
Plumbago—Ceylon, ℔ lb. .... 4@5
American ℔ lb..... ..... 5@7
Potassium—Cyanide, ℔ lb.... .39@40
Bromide, ℔ lb..... 33
Chlorate, ℔ lb. ....13¾@15½
Carb. ℔ lb ..... 4.70@5.50
Caustic, ℔ lb .... 7½@8
Iodide..... .....2.70@2.75
Muriate, ℔ 100 lbs..... ..... 1.80
Nitrate, refined, ℔ lb..... 6@8
Bichromate, ℔ lb ..... 11½@12
Sulphate, ℔ 100 lbs..... .... 2.30@2 35
Yellow Prussiate, ℔ lb... . .... 17½@18
Red Prussiate, ℔ lb... . ..... 45@45
Pumice Stone—Select lumps, lb. 3¼
Original cks., ℔ lb.... . ..... 1¾
Powdered, pure, ℔ lb... . .... 2¼@2½
Pyrites—Non-cupreous, p. unit, s. 10d.
Quartz—Ground, ℔ ton. 16.00
Rotten Stone—Powdered, ℔ lb..3¼@3¼
Lump, ℔ lb... .... 6@10
Eng., powdered, ℔ ton. £4
Lump, ℔ ton..... £5
Salt—Liverpool, ground ℔ sack. . 75@80
Turk's Island, ℔ bush .....25@27
Salt Cake—℔ lb ....50@57
Saltpeter—Crude, ℔ lb. .... 5@5½
Refined, ℔ lb. .... 6@8
Soda Ash—Carb.,48 % 100 ℔...1.22½@1.30
High test .... 1.12½@1.15
Caustic, 48 % 1.23¼
Soda Caustic, 60%..... 2 40
" " 70%..... .....2.10 @2.15
" " 74-6%..... .....2.10 @2.15
Sal, English, ℔ 100 lbs.... .90 @1.00
Sal, American, ℔ 100 lbs ... .80
Nitrate ℔ 100 lbs..... ..... 2.05
Strontium—Nitrate ℔ lb. ..... 9@9½
Sulphur—Roll, ℔ lb..... .... 1¾
Flour, ℔ lb 2
Crude Brimstone, 2s., ℔ ton.19.50@20.00
Crude Brimstone, 3ds, ℔ ton. 19 00
Talc—Ground French, ℔ lb .. ...1¼@1½
Domestic, ℔ lb.... ..... 1@1¼
c. i. f. Liverpool, ℔ ton..... .. £4 5 0
Vermillion—American, ℔ lb.. .. 61
English, ℔ lb.. . ... 82@85
Vitriol—(Blue), Ordinary, ℔ lb. 5¾@6½
Extra, ℔ lb. 7
Zinc Oxide—Am., Dry, ℔ lb. 4½
Antwerp, Red Seal, ℔ lb..... .....6@6½
Paris, Red Seal, ℔ lb. ....6½@7
* Spot

BUILDING MATERIAL.

Bricks—Pale, ℔ 1,000 ..... 3 00@3.25
Jerseys, ℔ 1,000 .. .. 4.50
Up Rivers. ℔ 1000..... .... 4.50@5 00
Haverstraw seconds, ℔ 1000... 5 00@5.50
Haverstraw firsts ℔ 1.000.... 5.50@6.00
Fronts, nominal, ℔ 1000.
Croton..... ..... 14.00@16.00
Wilmington. ..... 20.00@21.00
Philadelphia..... ... ... @28.00
Trenton ..... @28.00
Baltimore..... .....
Building Stone—Amherst freestone, ℔ cu. ft... ..... 95@1.00
Brownstone, ℔ cu. ft. .... 1.00@1.35
Granite, rough, ℔ cu.ft..... . 45@1.25
Granite, Scotch ℔ cu ft. .. 1.00@1.15
Cement—Rosendale, ℔ bbl .90@1 10
Portland, American, ℔ bbl. . 2 15@2 45
Portland, foreign, ℔ bbl.... 2.40
Portland, " special brands.2.45@3.75
Roman, ℔ bbl. .... 2.65@2 85
Keene's coarse, ℔ bbl..... 4 50@5.50
Keene's fine, ℔ bbl..... .... 7.00@8.25
Slate—Purple and green roofing, ℔ 100 ft ....
Red roofing, ℔ 100 sq. ft. ..10.00@15.00
Black, roofing, ℔ 100 sq. ft... 4.50@5.25
Lime—Rockland, common ℔ bbl... 1.00
Rockland, finishing, ℔ bbl..... 1.20
St. John, com. and finish, ℔ bbl. .90
Glens Falls, com. and fin., ℔ bbl .80@1.10
Labor—Ordinary, ℔ day..... 1.50@2 00
Masons, ℔ day 4.00
Plasterers, ℔ day..... ..... 4.00
Carpenters, ℔ day..... ..... 3.50
Plumbers, ℔ day 3.50
Painters, ℔ day..... 2.50@3.50
Stonecutters, ℔ day..... .3.50 @4 00
Tilelayers, ℔ day..... 3.50@4.50
Bricklayers, ℔ day..... ..... 4 00

THE RARER METALS.

Aluminum—(Metallic), ℔ lb. $4.00
Sheet, per lb..6.00@8.00
Arsenic—Metallic, per lb..... 20
Barium—(Metallic), per lb..... .975.00
Bismuth—(Metallic), per lb..... 2.10
Cadmium—(Metallic), per lb.... 1.25
Calcium—(Metallic), per oz..... 150.00
Cerium—(Metallic) per oz..... .160.00
Chromium—(Metallic), per lb...200 00
Cobalt—(Metallic), per lb 6.00
Didymium—(Metallic), per oz...160.00
Erbium—(Metallic), per oz..... 140.00
Gallium—(Metallic), per oz 3250.00
Glucinum—(Metallic) per oz ... 250.00
Indium—(Metallic), per oz..... 158.00
Iridium—(Metallic), per lb.... 650.00
Lanthanum—(Metallic), per oz.175.00
Lithium—(Metallic), per oz.....160.00
Magnesium—Per lb..... .... 4.50
Manganese—Metallic, per lb.... 1.10
Chem. pure, per oz. 10 00
Molybdenum—(Metallic), per oz. 6.00
Niobium—(Metallic), per oz..... 128.00
Osmium—(Metallic), per lb 640.00
Palladium—(Metallic), per lb...400.00
Platinum—(Metallic), per lb. ..140.00
Potassium—Metallic, per lb.... 28.00
Rhodium—(Metallic), per lb.....512.00
Ruthenium—(Metallic), per oz. 112.00
Rubidium—(Metallic), per oz...200.00
Selenium—(Metallic), per oz.... 3.00
Sodium—(Metallic) per lb. .. 2.75
Strontium—(Metallic), per oz..128 00
Tantallum—(Metallic) per oz...144.00
Telurium—(Metallic) per oz.... 9 00
Thallium—(Metallic) per oz..... 3.00
Titanium—(Metallic) per oz....32.00
Thorium—(Metallic) per oz.....272.00
Tungsten—(Metallic) per oz..... 4.00
Vanadium—(Metallic), per oz..320.00
Yttrium—(Metallic), per oz 144.00
Zirconium—(Metallic), per oz..240.00

METALS.

Aluminum—
94-96% pure, ℔ lb. $5
Over 96% pure, ℔ lb..... 6
Copper—
Lake Ingot, Spot, ℔ lb..... .... 12c.
Electrolytic, ℔ lb .... 10·90c.
Casting Brands, ℔ lb. ....
Chili Bars, London, ℔ ton £41
Sheet Copper (according to size), ℔ lb..... ..... 25@30c.
G. M. B..... ..... £41
Nickel.—
Metallic, per lb..... 60c.
Lead—
Domestic, Common, Spot... .. 4·05c.
Foreign .... 4 90c.
Sheet, ℔ lb..... ..... 6¾c.
Pipe, ℔ lb .... 6c.
Tin lined Pipe, ℔ lb..... 15c.
Shot, ℔ 25-lb. bag ..... 1·16c.
Spanish Lead, London.. ... £12 10s.
Tin—
Tin Plates .... 13s. 6d.
Tin Spot in London . ... .. £90 7s. 6d.
Pig tin, spot in N. Y., ℔ lb.. 20·25c.
Zinc—
Domestic spelter, ℔ lb..... .. 5·00c.
Foreign spelter, ℔ lb... ... 5·80c.
Silesian, ton..... .... £17 15s
Sheet, American, ℔ lb .... 6¼c.
Antimony—Hallet's, per lb.... 13⅜c.
Cookson's, per lb..... ..... 14½c.
Star Antimony .... £36 10s.
Quicksilver—Per lb..... .... 57@58c.
London, ℔ flask ..... £8 5s @£8 10s.

IRON AND STEEL.

New York Prices.

American Pig-Iron.—At tidewater.
No. 1 X ....$16.50@$17 50
No. 2 X..... ..... 15.50@ 16.00
Forge .... 14.50@ 15.50
Scotch Pig—Coltness... $21.50@$21.75
Clyde ....
Dalmellington..... 19.50@ 20.00
Summerlee ..... 21.75@ 21 50
Shotts... ..... 20.50@ 21.00
Langloan ..... @ 21.00
By Cable to-day to the Metal Exchange :
Scotch Warrants.... .....42s. 5d.
Coltness, at Glasgow ....54s 3d.
Langloan, at Glasgow..... .....53s. 3d.
Summerlee, at Glasgow..... 54s.
Gartsherrie, at Glasgow..... 51s. 6d.
Glengarnock, at Ardrossan..... 51s. 3d.
Dalmellington, at Ardrossan.....45s.
Eglinton, at Ardrossan ... .43s.
Bessemer Pig—
Foreign, nominally..... 20.50@ 21.00
Domestic " ..... 16 50@ 17.50
Spiegeleisen—
German, 20 per cent..... 27.50@ 28.00
English, 20 " " ..... 28.00@ 28.50
" 30 " " ..... 33.00@ 34.00
Ferro Manganese, 80%..... @ 58.00
Steel Billets, " ..... 30.00@ 33.00
Steel Nail Slabs, " ..... 28.00@ 28 50
Steel Wire Rods, " ..... 42.50@ 43.00
Steel Rails—
Heavy sections, at mill.... 27.50@ 28.00
Light " " .... 30.00@ 32.00
Structural Iron and Steel—
Bridge Plate, at mill.. .....2·30@2·1c.
Angles, at mill ..... 1·90@2·00c.
Tees, at mill..... .. .. 2 40@2·50c.
Steel Angles, at mill.... ....2·15@2·25c.
Beams and Channels, on wharf, 2·8c. base
Steel Plates—
Tank and Ship, on wharf.....2·15@2·25
Shell, on wharf..... ....2 4 @2·05
Flange, " .... 2 6 @2 8
Fire-Box, on wharf..... 3·25@4
Iron Plates—
Common tank, on wharf....2 05@2·25c.
Refined, on wharf.....2·3@2 4c.
Shell, " ....2 4@2 5c.
Flange. " ..... 3·4@3·5c.
Extra flange..... 3¾@4
Bar Iron—
Refined..... ..... 1·7@2·0c.
Common ....1·60@1·7c.
Merchant Steel—
American tool .... 7½@10c.
Special grades..... 13 @20c.
Crucible machinery..... 5 @6c
" spring..... ..... 3¾@4¼c.
Bessemer machinery..... ....2·25@ ·75c.
" spring. ....2·5@2·70c.
Cast-Iron Pipe—At works:
According to size..... $25 00@$31.00
Wrought Iron Pipe—nominal—
Butt-Welded, Plain and Tarred, 55% disc; Galv., 45% disc.
Lap-Welded, Plain and Tarred, 65% disc.; Galv., 55% disc.
Boiler Tubes—Per cent disc.....62½%
Rail Fastenings—
Spikes..... .....1·95@2c.
Angle Fish-bars..... .1·75@1 85c
Bolts and Sq Nuts..... 2·70@2·75
" Hex " ..... 2·80@3c.
Wrought Scrap—
No. 1 Yard *to vessel*..... 20.50
Cast Scrap 15.50
Old Car Wheels..... ... 18.00
Old Rails—Tees 22.00
—Doubles 23 00
Nails—In car-load lots. .. $1.80@ $2.00
—From store . .... 1.85@ 2.00
Nails .... $1.90 usual discount
Steel Nails..... ..... $1.90
Wire Nails..... ..... 2.55
Two per cent off for cash. *At works.

Louisville Prices.

Hot Blast Irons—
So. Coke, No. 1..... ....$14 25@$14.75
" " No. 2..... 13 75@ 14 25
" " No. 3..... 12.75@ 13.75
Mahoning Valley (Lake Ore Mixture) .... 17.50@ 18.50
So. Charcoal, No. 1..... 16.50@ 17.00
" " No. 2 ..... 16.00@ 16.50
Missouri Charcoal No. 1.... 17.50@ 18.00
" " No. 2.... 17.00@ 17.50
Forge Irons—
Neutral Coke.... ..... $13.00@$13.25
Cold Short ..... 12.75@ 13.00
Mottled..... 11.75@ 12.25
Car Wheel and Malleable Irons—
Southern (standard brands).$21.50@$22.00
" (other brands)..... 17 50@ 18.00
Lake Superior..... 22.00@ 22 50

Pittsburg Prices.

Coke or Bituminous Pig—
Foundry No. 1..... ....$16 25@16.50
Foundry No. 2..... .... 15.25@15.50
Gray Forge No. 3..... 14.00@.....
" " No. 4.... ... . 13 75@13.85
White .... 13.75@14 00
Mottled..... ..... 13.75@14.00
Silvery .... 16.00@18.50
Bessemer..... ..... 15.75@16.00
Low Phos..... ..... 20.50@.....
Charcoal Pig—
Foundry No. 1. .... 23.50@24.50
Foundry No. 2..... . 22.00@23.50
Cold-Blast..... ..... 25.00@28.00
Warm-Blast..... ..... 24 00@25.00
10 + 12% Spiegel..... ..... 27.50
20% Spiegel... .... 30.00
Muck-Bar..... ..... 26.25@26.50
Steel Blooms..... ....@28 00
Steel Slabs .... 26.75@27 00
Steel Crop Ends..... ..... 18 00
Steel Bloom Ends..... ..... 18.00
Ferro Manganese, 80% . .... 60.00@.....
Steel Billets..... ..... 27 00@27.25
Old Iron Rails..... .. 22.00@22.25
Old Steel Rails..... ..... 17 50@18.00
No. 1 W. Scrap..... ..... 18 50@19.00
No. 2 W. Scrap . ... 17 50@.....
Steel Rails..... ..... 27.50@28.00
" light sections... ..... 27.50@31 00
Bar Iron, nominal..... 1.65@ 1.70
Iron Nails..... ..... 1.85@ 1.90
Steel Nails..... ..... 1.80@ 1.90
Wire Nails..... ..... 2.15@ 2.20

Philadelphia Prices.

Foundry No. 1..... ..... $17.00@18.00
Foundry No. 2..... ..... 16.00@16.50
Gray Forge..... ..... 14.50@15.25
Bessemer Pig..... ..... 19 00@.....
Foreign Bessemer..... 20.00@.....
Spiegeleisen. ....@27.50
Scrap, Selected..... 22.00@.....
No. 1 .... 21.00@21.50
Cargo Scrap..... ... ... 20.00@21.00
Muck-Bars.. ....@27.00
Merchant Iron... .... 1.60@ 1.80
Plate Iron..... ..... 1.90@ 2.00
Tank Iron .... 2.00@ 2 10
Skelp Iron..... ..... 1.70@ 1.85
Angles... .... 1.95@.....
Beams and Channels..... .. 2.80@.....
Nails .... 1.60@ 1.90
Steel Rails..... 26.00@27.00
Old Rails..... 22.00@23.00

STOCK MARKET QUOTATIONS

Birmingham, Ala.

COMPANY.	Bid	Asked.
Ala. R. Mill Co.	$45@$50	$60@$65
Ala. Con. C. & C Co.....	....	$30
*Alice Furnace.	$102	$103
Anna Howe G. Mg. Co... ..	$1¾	....
Bess. Land Co.	$22@$23	$24@$25
Bir. Fur. & Mg.	....	$18
Bir. Mg. & M g.	....	$144
Broken Arrow.	$3	$5½
De Bardeleben C. & I. Co....	$45@$50	$60@$65
Decat. L. Imp.	$10@$11	$11½@$12
DecaturMin. L.	....	$25
Enterprise Mfg.	....	$50
*Eureka	$102@$103	$108@$109
Hen. S. & M. Co.	$80	$95@$105
Jagger Towley C. & C	$9½@$10	$11½@$12
Mag-Ellen.....	$96	....
*Mary Pratt...$100@$101		$103@$104
Sloss I. & S....	....	$42½
†Sloss I. & S...	....	$94
††Sloss I & S..	$60	$65
Tuscaloose C., I. & L. Co	$20	....
Tenn. C. & I. Co.	$35@$37	$38@$39
*Williamson...	$99¾	....
Woodstock I. Co $54½@$55½		$60

Sales during the week ended June 11th.
* Bonds. † First mortgage. †† Second mortgage. ‡ Selling price.

Pittsburg, Pa.

COMPANY.	H.	L.	Closing
Bridgewater GasCo	50 00	47 00	47 00
Chartiers Val. Gas.	50.00	49 50	50.00
Forest Oil Co.....	100 00	100 00	100.00
La Noria Mining ..	1.75	1.25	1 75
Nat. Gas Co. of W. Va	63 00	61.00	63.00
New York & C. Gas Co	37.00	35.00	35.00
Ohio Valley Gas....	35.00	35.00	35.00
People's N. G. & P. Co....	18.00	16.75	18.00
Philadelphia Co...	37.50	36.50	37 50
Pine Run Gas... .	*90.00	*90.00	*90.00
West & Cambria..	35.00	15.00	35.00
W'house A. B Co.	*117.50	*117.50	*117 50
W'house B. Co. Lm.	64.00	64.00	64.00
W'house E. Light.	*54.00	*54.00	*54.00
Wheeling Gas ...	32.00	30.50	31 00

Sales during the week ending June 13:

Chartiers Valley..	10 shs.		$50
Philadelphia Co..	184 "		37
Pine Run Gas.....	20 "		90
W'house A. Brake	25 "		117½
W'house E. Light.	150 "		54

*Actual selling price.

Foreign Quotations.

COMPANY.	*London.* Highest.	June 1. Lowest
Alturas Gold, Idaho...	4s.	2s.
Arizona Copper, Ariz..	18s. 6d.	18s.
Callao Bis, Venz.....	3s. 6d.	3s.
Carlisle, N. Mex	3s. 3d.	2s. 9d.
Colorado United, Colo..	3s. 6d.	3s.
Columbian, S. A.....	£2½	£1¾
Comstock, Utah.....	£1¼	£1⅛
Cons. Esmeralda, Nev..	3s.	2s. 6d.
Denver Gold, Colo...	1s 6d.	1s.
Dickens Custer, Idaho.	2s. 9d.	2s. 3d
Eberhardt, Nev	1s. 6d.	1s.
El Callao, Venezuela....	£3¾	£3¼
Elmore, Idaho	3s. 9d.	3s 3d.
Empire, Mont	2s. 6d.	2s.
Flagstaff, Utah.....	1s. 3d.	9d.
Garfield, Nev..	6s 6d.	5s 6d.
Hambley Freehold N.C.	£1⅛	£⅞
Ilex, Cal	£⅜	£⅛
Jay Hawk, Mont	3s. 6d.	2s. 6d.
Josephine, Cal	10s.	8s.
Kohinoor, Colo.....	4s 9d.	3s 3d.
Mason & Barry, Port....	£6½	£6¼
Montana Lt., Mont	£1 15·16	£1 13·16
New California, Colo...	9s 3d.	8s. 9d.
New Consolidated	1s. 6d.	1s.
New Emma, S., Utah...	5s. 3d.	4s 9d.
New Hoover Hill, N. C.	2s. 3d.	1s. 9d.
New La Plata, Colo...	1s. 6d.	1s.
Old Lout, Colo.....	£1¼	£1
Pittsburg Cons., Nev...	16s. 3d.	1 s. 9d.
Quebrada, Venezuela...	£1	£¾
Richmond Con., Nev...	£2¼	£1¾
Ruby & Dunderberg, Nev	1s. 3d.	9d.
Russell Gold, N. C.....	2s. 3d.	1 9d.
Sierra Buttes, Cal.....	£¾	£⅜
Stanly, N. C	4s.	2s.
United Mex can, Mex...	£½	£⅜
U. S. Placer, Colo.....	1s. 9d.	1s 3d.
Viola Lt., Idaho	3s. 6d.	2s 6d.
Paris *		May 30
Belmez, Spain.....	540.00	540.00
Boleo, Mex	.....365.00	365.00
Callao Bis. Venez.....	5.50	5.50
East Oregon, Ore.....	26.00	24.00
Forest Hill Divide, Cal	400.00	400.00
Golden River, Cal 390 00		390.00
" " parts.. . 60.00		60 00
Lexington, Mont. ...13 50		132.50
" parts..... . 5.00		5.00
Ouray, Colo....	28.00	28.00
Rio Tinto, Spain.... ..	287.50	287.50
Tharsis, Spain.....	90.50	90.50

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied.	Date and amount of last.			Dividends. Total paid.	Date and amount of last.		
1	Adams, S. L.	Colo.	$1,500,000	150,000	$10	*	.....	.....	.....	$555,000	Jan	1887	.15
2	Alice, S. C.	Mont	10,000,000	400,000	25	*	.....	.....	.....	775,000	Dec.	1888	.06¼
3	Alma Cons., G.	Idah.	300,000	30,000	10	*	.....	.....	.....	45,000	Dec.	1888	.50
4	Alturas, G.	Idah.	1,500,000	300,000	5	*	.....	.....	.....	202,500	Jan.	1885	37½
5	Amy & Silvermitts, S.	Mon.	.....	341,419	...	.....	.....	.....	.....	247,530	Aug.	1887	12½
6	Atlantic, C.	Mich	1,000,000	40,000	25	$280,000	Apl.	1878	$1.00	520,000	Feb.	1889	2.00
7	Argenta, S.	Nev.	10,000,000	100,000	100	326,000	July	1885	.10	40,000	Feb.	1890	.20
8	Aspen Mg. & S., S. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	220,000	Jun.	1889	.20
9	Aurora, I.	Mich	2,000,000	100,000	20	*	.....	.....	.....	155,000	Oct.	1887	1.87½
10	Bassick, G. S.	Colo.	10,000,000	100,000	100	*	.....	.....	.....	400,000	Mar.	1884	1.00
11	Belle Isle, S.	Nev.	10,000,000	100,000	100	155 000	Apl.	1889	.10	300,000	Jan.	1878	.05
12	Belcher, G. S.	Nev.	10,400,000	104,000	100	2,822,000	Feb.	1889	.60	15,397,200	Apl.	1876	1.00
13	Bellevue Idaho, S. L.	Idah.	1,250,000	125,000	10	88,750	May	1889	.10	187,500	Jan	1887	10
14	Bodie Con., G. S.	Cal.	10,000 000	100 000	100	550,000	Mar.	1889	50	1,295,000	Apl.	1885	50
15	Boston & Mont., G.	Mon.	2,500,000	250,000	10	*	.....	.....	.....	520,000	Jun.	1886	.1b
16	Boston & Mont., G.S.	Mon	2,500,000	100,000	25	*	.....	.....	.....	500,000	Apl.	1889	1.00
17	Breese, S.	Colo	1,000,000	200,000	5	*	.....	.....	.....	2,000	Feb.	1890	.01
18	Brooklyn Lead, L. S.	Utah	500,000	50,000	10	.....	.....	.....	.....	127,000	July	1887	.05
19	Bulwer, G.	Cal.	10,000,000	100,000	10	105,000	Apr.	1889	.25	175,000	Jan.	1884	.10
20	Bunker Hill & Sull.	Idah.	3,000,000	300,000	10	*	.....	.....	.....	150,000	Oct.	1883	.06¾
21	Caledonia, G.	Dak.	10,000,000	100,000	100	505,000	May	1885	.15	104,000	Jun.	1889	.08
22	Calumet & Hecla, C.	Mich	2,500,000	100,000	25	1,200,000	.....	.....	.....	32,350,000	July	1889	5.00
23	Carbonate Hill, S. L.	Colo.	1,500,000	300,000	10	*	.....	.....	.....	80,000	Apl.	1884	05
24	Carlisle, G.	N. M.	1,000,000	200,000	5	*	.....	.....	.....	175,000	Dec.	1889	.12½
25	Castle Creek, G.	Idah.	100,000	100,000	1	.....	.....	.....	.....	51,000	Oct.	1883	.03
26	Catalpa, S. L.	Colo.	3,000,000	300,000	10	*	.....	.....	.....	270,000	May.	1884	.10
27	Central, C.	Mich	500,000	20,000	25	100,000	Sept	1861	.06	1,930,000	Feb.	1889	2.00
28	Chrysolite, S. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	1,650,000	Dec.	1884	.25
29	Colorado Central, S. L.	Colo.	2,750,000	275,000	10	*	.....	.....	.....	392,250	Jun.	1889	.05
30	Confidence, S. L.	Nev.	.....	24,960	...	287,440	Apl.	1887	.50	199,680	Apl.	1889	1.00
31	Cons. Cal. & Va., G. S.	Nev.	31,000,000	310,000	100	108,000	Jan.	1885	.20	2,989,800	Jun.	1886	.50
32	Contention, S.	Ariz.	12,500,000	250,000	50	.....	.....	.....	.....	2,587,000	Dec.	1884	.25
33	**Cop. Queen Cons, C.	Ariz.	1,400 000	140,000	10	.....	.....	.....	.....	140,000	Oct	1888	.50
34	Crescent, S. L. G.	Utah	15,000,000	600,000	25	*	.....	.....	.....	228,000	Oct.	1888	.03
35	Crown Point, G. S.	Nev.	10,000,000	100,000	100	2,825,000	Oct.	1888	.50	11,584 000	Jan.	1875	2.00
36	Daly, S. L.	Utah	3,000,000	150,000	20	*	.....	.....	.....	1,050,000	May	1889	.25
37	Deer Creek, S. G.	Idah.	1 000,000	200,000	5	*	.....	.....	.....	20,000	Jun.	1889	.05
38	Deadwood-Terra, G.	Dak.	5,000,000	200,000	25	*	.....	.....	.....	1,000,000	Nov.	1887	.10
39	Decbec B. Grav., G. S.	Cal.	10,000,000	100,000	100	90,000	Dec.	1881	.10	180,000	May	1887	.10
40	Dunkin, S. L.	Colo.	5,000,000	200 000	25	*	.....	.....	.....	370,000	Apl.	1889	.05
41	Dunstone, G. S. L.	Mont	1,000,000	200,000	5	*	.....	.....	.....	6,000	Nov.	1888	.03
42	Eclipse	Colo.	100,000	100,000	1	.....	.....	.....	.....	20,000	Nov.	1887	.10
43	Elknorn, G. S.	Mont	1,000,000	100,000	10	50,000	July	1883	.50	170,000	July	1887	.05
44	Empire Lt., G.	Mont	500,000	100,000	5	*	.....	.....	.....	70,500	Oct.	1887	.37½
45	Eureka Con., G. S. L.	Nev.	5,000,000	50,000	100	625,000	Mar.	1889	.25	4,955,000	July	1888	25
46	Evening Star, S. L.	Colo.	500,000	50,000	10	.....	.....	.....	.....	1,425,000	Apl.	1889	25
47	Excelsior, G.	Cal.	10,000,000	100,000	100	500,000	Sept	1885	1.00	475,000	Oct.	1880	25
48	Father de Smet, G.	Dak.	10,000,000	100 000	100	200,000	Nov	1878	1.00	1,125,000	Dec.	1883	.20
49	Franklin, C.	Mich	1,000,000	40,000	25	220,000	Jun.	1871	.....	800,000	Dec.	1888	2.00
50	Freeland, G. S. C.	Colo.	5,000,000	200,000	25	*	.....	.....	.....	190,000	July	1886	.10
51	Fresno Enterprise, G.	Cal.	5,000,000	100,000	50	.....	.....	Mch	1883	.10	110,000	July	1888	.10
52	Garfield Lt., G. S.	Nev.	500,000	100,000	5	.....	.....	.....	.....	85,000	Apl.	1888	12½
53	Golconda, G. S.	Idah.	1,000,000	100,000	10	.....	.....	.....	.....	120,000	May	1888	.60
54	Gould & Curry, G. S.	Nev.	10,300,000	108,000	100	4,402,200	May	1889	.30	826,800	Oct.	1870	10.00
55	Grand Central, S.	Ariz.	1,000,000	100,000	10	*	.....	.....	.....	625,000	Dec	1882	.25
56	Grand Prize, S.	Nev.	10,000,000	100,000	100	625,000	Mar.	1889	.30	495 000	Mar.	1884	.25
57	Granite, S. L.	Idah.	500,000	500,000	1	.....	.....	.....	.....	10,000	Jun.	1889	.02
58	Granite Mountain, S.	Mont	10,000,000	400,000	25	*	.....	.....	.....	6,400,000	May	1889	.50
59	Green Mountain, G.	Cal.	1,250,000	125,000	10	*	.....	.....	.....	312,000	Nov.	1881	07½
60	Hale & Norcross, G. S	Nev.	11,200,000	112,000	100	5,086,000	July	1887	.50	1,922,000	Aug.	1888	.50
61	Hecla Con., S. G. L. C.	Mont	1,500,000	30,000	50	*	.....	.....	.....	1,332,500	May	1889	.50
62	Hel'a Mg & Red, G.S.L.	Mont	3,315,000	663,000	5	*	.....	.....	.....	197,975	July	1886	.06
63	Holmes, S.	Nev.	10,000,000	100,000	100	300,000	Sept	1885	10	75,000	Apl	1886	.25
64	Holyoke, G.	Idah.	200,000	200,000	1	.....	.....	.....	.....	27,000	Feb.	1883	.10
65	Homestake, G.	Dak.	12,500,000	125,000	100	200,000	July	1878	1.00	4,405,750	Jun.	1889	.10
66	Honorine, S. L.	Utah	500,000	250,000	2	37,500	Apl.	1889	.05	125,000	Sept	1887	.05
67	Hope, S.	Mont	1,000,000	100,000	10	*	.....	.....	.....	223,250	Apl.	1888	.25
68	Horn-Silver, S. L.	Utah	10,000,000	400,000	25	*	.....	.....	.....	4,000,000	Nov.	1884	.50
69	Hubert, G.	Colo.	500,000	50,000	10	*	.....	.....	.....	239,500	Oct.	1888	.11
70	Idaho, G.	Cal.	310,000	3,100	100	.....	.....	.....	.....	5,166,150	Jun.	1889	5.00
71	Ideal, S. L.	Colo.	1,500,000	50,000	10	*	.....	.....	.....	15,000	Oct.	1880	.05
72	Illinois, S.	N. M.	100,000	100,000	1	*	.....	.....	.....	45,000	Apl.	1889	.10
73	Independence, S.	Nev.	10,000,000	100,000	100	340,000	Oct.	1886	.30	225,000	Sept	1879	.25
74	Iron Hill, S.	Dak.	2,500,000	250,000	10	126,500	Jan.	1889	.03	156,250	Nov	1887	.07½
75	Iron-Silver, S. L.	Colo.	10,000,000	500,000	20	*	.....	.....	.....	2,500,000	Apl.	1889	.20
76	Jackson, G. S.	Nev.	5,000,000	50,000	100	237,500	Nov	1880	.10	50,000	Oct.	1886	.10
77	Jay Gould	Mont	2,000,000	40,000	5	*	.....	.....	.....	365,000	Apl.	1889	.04
78	Jocuistitla, S.	Mex.	2,500,000	250,000	10	.....	.....	.....	.....	1,200,000	Feb.	1880	.50
79	Jumbo, G.	Colo.	3,000,000	300,000	10	.....	.....	.....	.....	35,000	Oct.	1887	.02¾
80	Kentuck	Nev.	3,000,000	30,000	100	351,000	Apl.	1889	.30	1,350,000	Dec.	1886	.10
81	La Plata, S. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	610,000	Sept	1882	.30
82	Leadville Cons., S. L.	Colo.	4,000,000	400,000	10	*	.....	.....	.....	423,000	Apl.	1887	.05
83	Lexington, G. S.	Mont	4,000,000	40,000	100	*	.....	.....	.....	565,000	Jan.	1885	2.00
84	Little Chief, S. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	800,000	July	1888	.10
85	Little Pittsburg, S. L.	Colo.	20,000,000	200,000	100	*	.....	.....	.....	1,050,000	Mch.	1880	.50
86	Lookout, G.	Dak.	1,000,000	500,000	2	*	.....	.....	.....	60,000	May	1888	.02
87	Marion Bullion, G.	N. C.	500,000	.....	...	.....	.....	.....	.....	15,000	Jan.	1886	.....
88	Martin White, S.	Nev.	10,000,000	100,000	100	1,175,000	Jan.	1889	25	140,000	Dec.	1886	.25
89	Mary Murphy, G. S.	Colo.	350,000	3,500	100	*	.....	.....	.....	175,000	May	1888	5.00
90	Minnesota, C.	Mich	1,000,000	40,000	25	420,000	Apl.	1886	1 00	1,820,000	Mar.	1876	.....
91	Mono, G.	Cal.	5,000,000	50,000	100	65,350	Mar.	1889	.25	12,500	Mar.	1886	.25
92	Montana, Lt., G. S.	Mont	3,300,000	660,000	5	*	.....	.....	.....	2,100,285	Jan.	1889	.06¾
93	Morning Star, S. L.	Colo.	1,000,000	100,000	10	*	.....	.....	.....	775,000	Mar.	1888	.25
94	Moulton, S. G.	Mont	2,000,000	400,000	5	*	.....	.....	.....	380,000	Dec.	1887	.07½
95	Mount Pleasant, G.	Cal.	150,000	150,000	1	*	.....	.....	.....	150,000	Feb.	1887	.30
96	Mt. Diablo, S.	Nev.	5,000,000	50,000	100	137,500	Jun.	1880	2.00	140,000	Jan.	1889	.40
97	Napa, Q.	Cal.	700,000	100,000	7	*	.....	.....	.....	310,000	July	1889	.10
98	Navajo, G. S.	Nev.	10,000,000	100,000	100	485,000	Apl.	1888	.30	365,000	Apl.	1889	6.10
99	New Guston, S.	Colo.	500,000	100,000	5	*	.....	.....	.....	100,000	Dec.	1888	.50
100	N. Hoover Hill, G. S.	N. C.	300,000	120,000	2½	*	.....	.....	.....	30,000	Dec.	1885	.06¾
101	Northern Belle, S.	Nev.	5,000,000	100,000	100	425,000	Jan.	1884	8.30	2,400,000	Apl.	1883	.50
102	North Belle Isle, S.	Nev.	10,000,000	100,000	100	350,000	Jan	1889	.50	230,000	May	1888	.50
103	North Star, G.	Cal.	1,000,000	100,000	10	.....	.....	.....	.....	150,000	Dec	1888	.50
104	Ontario, S. L.	Utah	15,000,000	150,000	100	.....	.....	.....	.....	10,100,000	May	1889	.50
105	Ophir, G. S.	Nev.	10,000,000	100,000	100	4,159,440	May	1889	.50	1,865,800	July	1882	1.00
106	Original, S. C.	Mont	1,500,000	60,000	25	*	.....	.....	.....	123,000	July	1888	.05
107	Osceola, C.	Mich	1,250,000	50,000	25	480,000	Apl.	1876	1.60	1,222,500	Mar.	1889	1.00
108	Oxford, G.	Nev.	125,000	125,000	1	*	.....	.....	.....	43,500	May	1885	.02
109	Paradise Valley, G. S	Nev.	10,000,000	100,000	100	57,000	Apl.	1888	.15	150,000	Apl.	1887	.10
110	Parrot, C.	Mont	1,800,000	180,000	10	*	.....	.....	.....	372,000	May	1889	.10
111	Peacock, S. G. C.	N.M.	2,000,000	200,000	10	*	.....	.....	.....	60,000	Nov.	1886	.....
112	Plumas Eureka, G.	Cal.	1,406,250	140,625	10	.....	.....	.....	.....	2,495,312	Apl.	1889	.50
113	Plutus, G. S. C. L.	Colo.	2,000,000	200,000	10	*	.....	.....	.....	20,000	Feb.	1886	.10
114	Plymouth Con., G.	Cal.	5,000,000	100,000	50	*	.....	.....	.....	2,280,000	Feb.	1888	.40
115	Quicksilver, pref.	Cal.	4,300,000	43,000	100	*	.....	.....	.....	1,599,500	May	1889	1.50
116	" com.,	Cal.	5,700,000	57,000	100	.....	.....	.....	.....	643,867	July	1882	.40
117	Quincy, C.	Mich	1,000,000	40,000	25	200,000	Dec.	1862	.....	5,170,000	Feb.	1889	5.00
118	Richmond, S. L.	Nev.	1,350,000	54,000	25	*	.....	.....	.....	4,312,587	Jun.	1887	1.25
119	Ridge, C.	Mich.	500,000	20,000	25	219,939	Mar	1886	.50	99,785	Feb.	1880	.50
120	Robinson Con., S. L.	Colo.	10,000,000	200,000	50	*	.....	.....	.....	585,000	Mar.	1888	.05
121	Robert E. Lee, S. L.	Colo	10,000,000	500,000	20	.....	.....	.....	.....	100,000	Dec.	1882	.50
122	Savage, S.	Nev.	11,200,000	112,000	100	6,486,000	Jan.	1889	.50	4,460,000	Apl.	1889	3.00
123	Shoshone, G.	Idah.	150,000	150,000	1	.....	.....	.....	.....	7,500	Apl.	1883	.01
124	Sierra Buttes, G.	Cal.	2,225 000	122,500	10	.....	.....	.....	.....	1,598,145	Apl.	1888	.12½
125	Sierra Nevada, G. S.	Nev.	10,000,000	100,000	100	6,200,000	Jun.	1889	.25	102,000	Jan.	1871	1.00
126	Sierra Nevada, S. L.	Idaho	1,000,000	1	1	*	.....	.....	.....	40,000	May	1889	.02
127	Silver Cord, G. S. L.	Colo.	5,000,000	500,000	10	.....	.....	.....	.....	275,000	Apl.	1889	.10
128	Silver King, S.	Ariz.	10,000,000	100,000	100	50,000	Jun.	1888	.50	1,950,000	July	1887	.25
129	Silver Mg. of L. V.	N. M.	500,000	500,000	1	.....	.....	.....	.....	25,000	June	1889	.05
130	Silverton, G. S. L.	Colo.	3,000,000	300,000	10	*	.....	.....	.....	270,000	Nov.	1886	.02
131	Small Hopes Cons., S.	Colo.	5,000,000	250,000	20	*	.....	.....	.....	3,137,500	Jun.	1889	.10
132	Smuggler, S. L.	Colo.	600,000	60,000	10	.....	.....	.....	.....	66,700	Aug.	1883	.25
133	Spring Valley, G.	Cal.	200,000	200,000	1	50,000	Oct.	1886	.25	50,000	Jan	1881	25
134	Standard, G. S.	Cal.	10 000,000	100,000	100	25,000	Oct.	1884	.25	3,595,000	Jun.	1888	.05
135	Stormont, S.	Utah	500,000	500,000	1	*	.....	.....	.....	155,000	Nov	1881	.05
136	St. Joseph, L.	Mo.	1,500,000	150,000	10	*	.....	.....	.....	844,000	Dec.	1887	.20
137	Sturinans, G.	D. G.	3,000,000	600,000	5	*	.....	.....	.....	105,000	Nov.	1887	.05
138	Swansea, C.	Colo.	600,000	60,000	10	*	.....	.....	.....	9,000	Apl.	1886	.06⅓
139	Syndicate, G.	Cal.	10,000,000	100,000	100	38,729	July	1882	.15	48,308	Sept	1885	.10
140	Tamarack, C.	Mich.	1,000,000	40,000	25	520,000	Apl.	1885	3.00	950,000	July	1889	3.00
141	Tip Top, S.	Ariz.	10,000,000	100,000	100	250,000	Sept	1883	.25	100,000	Nov	1881	.20
142	Tombstone, G. S. L.	Ariz.	12,500,000	500,000	25	*	.....	.....	.....	1,250,000	Apl.	1882	.10
143	United Verde, C.	Ariz.	3,000,000	300,000	10	*	.....	.....	.....	97,500	Feb.	1884	.10
144	Valencia, S.	N. M.	150,000	1,500	100	.....	.....	.....	.....	37,500	Apl	1886	2.50½
145	Viola Lt., S.	Idah.	750,000	150,000	5	*	.....	.....	.....	272,500	Oct.	1888	.37½
146	Ward Cons., S. L.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....	10,000	Apl.	1889	.05
147	Yankee Girl	Colo.	2,500,000	250,000	10	*	.....	.....	.....	1,275,000	July	1887	.10
148	Yellow Jacket, G. S.	Nev.	12,000,000	120,000	100	5,500 000	Mar	1889	.50	2,184,000	Aug	1871	1.50
149	Webb City, L. Z.	Mo.	55,000	11,000	5	.....	.....	.....	.....	2,200	Apl.	1889	.10

NON-DIVIDEND-PAYING MINES

	Name and Location of Company.		Capital Stock.	Shares. No.	Par Value.	Assessments. Total levied	Date & am. of last,		
1	Agassiz Cons., S. L.	Colo.	$2,500,000	50,000	$50	*	.....	.....	.....
2	Alloues, C.	Mich	2,000,000	80,000	25	$697,000	Mar.	1889	.50
3	Alpha Con., G. S.	Nev.	3,000,000	30,000	100	562,500	Nov.	1888	87½
4	Alta, S.	Nev.	10,000,000	100,000	100	2,248,800	Sept	1888	.50
5	Amador, G.	Cal.	400,000	200,000	2	*	.....	.....	.....
6	American Flag, S.	Colo.	1,250,000	125,000	10	300,000	Jun	1877	.5
7	Anglo-Montana, Lt.	Mon.	600,000	120,000	5	.....	.....	.....	.....
8	Appalachian, Lt., G.	N. C.	1,500,000	300,000	5	*	.....	.....	.....
9	Astoria, G.	Cal.	200,000	100,000	2	*	.....	.....	.....
10	Barcelona, G.	Nev.	5,000,000	200,000	25	*	.....	.....	.....
11	Belmont Con., G.	Cal.	10,000,000	100,000	100	173,500	Jan.	1883	.10
12	Belmont, S.	Nev.	5,000,000	50,000	100	735,000	Apl.	1886	.10
13	Best & Belcher, G. S.	Nev.	10,080,000	100,800	100	2,130,190	Jun	1889	.20
14	Big Pittsburg, S. L.	Colo.	20,000,000	200,000	100	*	.....	.....	.....
15	Bi-Metallic, S.	Mon.	5,000,000	200,000	25	*	.....	.....	.....
16	Black Oak, G.	Cal.	3,000,000	300,000	10	*	.....	.....	.....
17	Boston Con., G.	Cal.	10,000,000	100,000	100	170,000	Nov	1883	.25
18	Bremen, S.	N. M.	5,000,000	500,000	10	*	.....	.....	.....
19	Brunswick, G.	Cal.	2,000 000	400,000	5	*	.....	.....	.....
20	Bullion, G. S.	Nev.	10,000,000	100,000	100	4,007,000	Aug.	1888	.50
21	Calaveras, G.	Cal.	500,000	500,000	1	*	.....	.....	.....
22	Carisa, G.	Wy.	500.000	100,000	5	*	.....	.....	.....
23	Carupano, G. S. L. C.	Ven.	200,000	100,000	2	*	.....	.....	.....
24	Cashier, G. S.	Colo.	500,000	250,000	2	*	.....	.....	.....
25	Cen. Contin'l, G.S.L.	C.&A	2,000,000	200,000	10	*	.....	.....	.....
26	Charles Dickens, G.S.	Idah.	1,250,000	250,000	5	*	.....	.....	.....
27	Cherokee, G.	Cal.	1,500,000	150,000	10	*	.....	.....	.....
28	Choilar, S.	Nev.	11,200,000	112,000	100	1,428,000	Oct.	1888	50
29	Cleveland, T.	Dak.	1,000,000	500,000	2	*	.....	.....	.....
30	Colchis	N.M.	500,000	50,000	10	*	.....	.....	.....
31	Comstock, G. S.	Nev.	10,000,000	100,000	100	170,000	Nov	1888	.50
32	Comstock, G. S.	Nev.	10,000,000	100,000	100	30 000	Mar.	1887	15
33	Con. Imperial, G. S.	Nev.	5,000,000	50,000	100	1,800,000	Nov.	1888	.05
34	Con. Pacific, G.	Cal.	6,000 000	60,000	100	186,000	Feb	1889	.1b
35	Cons. Silver, S.	Mo.	2,500,000	250,000	10	.....	.....	.....	.....
36	Courtlandt	Colo.	500,000	50,000	10	.....	.....	.....	.....
37	Crescent, S. L.	Colo.	3,000,000	300,000	10	.....	.....	.....	.....
38	Crescent, G. S.	Ariz.	10,000,000	100,000	100	115,000	Feb.	1889	.10
39	Crowell, G.	N. C.	500,000	500,000	1	*	.....	.....	.....
40	Dahlonega, G.	Ga.	250,000	250,000	1	*	.....	.....	.....
41	Dandy, S.	Colo.	5,000,000	500,000	10	*	.....	.....	.....
42	Dardanelles, G.	Cal.	1,000,000	100,000	10	*	.....	.....	.....
43	Decatur, S.	Colo.	1,500,000	300,000	5	*	.....	.....	.....
44	Denver City, S. L.	Colo.	5,000,000	500,000	10	*	.....	.....	.....
45	Denver Gold, G.	Colo.	300,000	60,000	5	*	.....	.....	.....
46	Durango, G.	Colo.	500,000	500,000	1	*	.....	.....	.....
47	Eastern Dev. Co., Lt.	N. S.	1,500,000	150 000	10	990,000	Mar.	1886	1.00
48	El Cristo, G. S.	U.S.C	1,000,000	500,000	2	*	.....	.....	.....
49	El Dorado, G.	Cal.	1,000,000	250,000	4	*	.....	.....	.....
50	El Talento, G.	U.S.C	1,000,000	500,000	2	*	.....	.....	.....
51	Empire, S.	Utah	10,000,000	100,000	100	*	.....	.....	.....
52	Eureka Tunnel, S. L.	Nev.	10,000,000	100,000	100	*	.....	.....	.....
53	Exchequer	Nev.	10,000,000	100,000	100	515,000	Apl.	1889	.25
54	Found Treasure, G. S.	Nev.	10,000,000	100,000	100	30,530	Apl.	1889	12½
55	Gogebic I. Syn., I.	Wis.	5,000,000	200,000	25	*	.....	.....	.....
56	Gold Cup, S.	Colo.	500,000	500,000	1	*	.....	.....	.....
57	Golden Era, S.	Mon.	2 000,000	200,000	10	*	.....	.....	.....
58	Gold Hunter, G.	Colo.	5,000,000	200,000	25	229,314	Dec.	1886	.25
59	Gold Rock, G.	Cal.	1,000,000	500,000	2	*	.....	.....	.....
60	Goodshaw, G.	Cal.	10,000,000	100,000	100	*	.....	.....	.....
61	Grand Belt, C.	Tex.	12,000,000	120,000	100	.....	.....	.....	.....
62	Graad Duke	Colo.	800,000	80,000	10	*	.....	.....	.....
63	Great Remance, G.	U.S.C	1,000,000	500,000	2	*	.....	.....	.....
64	Gregory-Bobtail, G.	Colo.	550,000	550,000	1	*	.....	.....	.....
65	Gregory Con., G.	Mon.	3,000,000	300,000	10	.....	.....	.....	.....
66	Hariem M. & M. Co, G.	Cal.	3,000,000	200,000	5	.....	.....	.....	.....
67	Head Cent. & Tr. S. G	Ariz.	10,000,000	100,000	100	.....	.....	.....	.....
68	Hector, G.	Cal.	1,500,000	300,000	5	45,000	Jan.	1889	.15
69	Highland, C.	Mich	500,000	25,000	20	.....	.....	.....	.....
70	Hollywood	Cal.	200,000	100,000	2	.....	.....	.....	.....
71	Hortense, S.	Colo.	2,000,000	200,000	10	.....	.....	.....	.....
72	Hurwell, G.	Mich	1,000,000	40,000	25	280,000	May	1887	3.00
73	Iron Gold & Silver, S.	N. M	2,000,000	200,000	10	.....	.....	.....	.....
74	Ironton, I.	Wis.	1,000,000	40,000	25	*	.....	.....	.....
75	Iroquois, C.	Mich	1,250,000	50,000	25	*	.....	.....	.....
76	J. D. Reymert	Ariz.	10,000,000	100,000	100	*	.....	.....	.....
77	Julia Cons., G. S.	Nev.	11,000,000	110,000	100	1,660,000	Jan.	1889	.10
78	Kearsarge, C.	Mich	1,250,000	50,000	25	190,000	Oct.	1887	1.00
79	Lacrosse, G.	Colo.	1,000,000	100,000	10	*	.....	.....	.....
80	Lee Basin, S. L.	Colo.	5,000,000	500,000	10	*	.....	.....	.....
81	Mammoth Bar., G.	Cal.	10,000,000	100,000	100	50,000	Dec.	1881

NEW YORK MINING STOCKS QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	June 8.		June 10.		June 11.		June 12.		June 13.		June 14.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Adams, Colo.	....	.....	...	....	....	....	...	....	.....	....	...	....	.....
Alice, Mont	...	.....	...	....	...	....	...	....	.....	....	...	....	.....
Argenta, Nev	...	.....	...	....	...	....	...	....	.....	....	...	....	.....
Aspen Mg & S, Colo	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Belcher, Nev	....	..	...	....	...	....	...	....	3.45	....	...	....	200
Belle Isle, Nev.	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Bodie Cons., Cal.	....	.....	...	....	...	....	...	....	.25	....	...	....	500
Breece, Colo	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Bulwer, Cal	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Caledonia, Dak	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Calumet & Hecla	...	.....	...	....	...	....	...	....	.....	....	...	....	.....
Challar, Nev.	....	.....	...	....	...	....	...	....	1.95	....	...	....	200
Chrysolite, Colo.	....	...	...	....	...	....	...	....	.....	....	...	....	.....
Colorado Cent'l, Colo.	....	.....	...	....	...	....	1.75	.....	2.00	....	...	....	700
Cons. Cal. & Va., Nev.	8.13	.....	7.63	....	7.50	7.38	...	....	7.25	....	...	....	625
Crown Point, Nev	...	....	...	....	...	....	...	....	3.00	....	...	....	100
Deadwood, Dak	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Dunkin, Colo.	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Eureka Cons., Nev	...	.....	2.00	....	...	.....	2.25	.....	.....	....	...	....	50
Father de Smet, Dak	....	...	....	.	.	....	...	....	.....	....	...	....	.....
Gould & Curr't, Colo.	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Grand Prize, Nev	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Hale & Norcross, Nev	4.00	..	...	....	...	....	3.75	.....	...	...	3.60	....	865
Holyoke, Idaho	....	.....	...	....	...	....	...	....	.....	....	...	....	.....
Homestake, Dak	...	...	...	....	...	....	...	....	.....	....	...	....	.....
Horn-Silver, Ut.	....	.....	1.20	....	...	....	...	....	1.20	1.15	1.15	....	2,300
Iron Hill, Dak	...	.....	...	.	....	....	...	....	.38	....	...	....	100
Iron Silver, Colo.	....	.....	...	....	...	.....	1.90	....	...	....	1.80	....	500
Leadville C., Colo.	....	.....	...	....	.11	....	.12	....	...	....	.11	....	1,500
Little Chief, Colo.	....	.....	...	....	...	.....	.33	.....	...	..	.33	.32	1,500
Little Pittsburg, Colo	....	.....	...	....	...	....	...	....	...	....	...	....	.....
Martin White, Nev.	....	.....	...	....	...	....	...	....	...	....	...	....	.....
Mono, Cal	...	.....	...	....	...	....	...	....	...	....	...	....	.....
Moulton, Mont.	....	.....	.44	...	....	....	.44	...	...	....	...	....	200
Mount Diablo, Nev.	...	.....	...	....	...	....	...	....	...	....	...	....	.....
Navajo, Nev.	....	.....	...	....	...	....	...	....	...	....	...	....	.....
North Belle Isle, Nev.	1.30	.....	...	.....	...	....	...	....	1.20	....	...	....	200
North Star, Cal.	...	.....	...	....	...	....	...	....	...	....	...	....	.....
Ontario, Ut.	....	.....	...	....	34.50	....	...	....	...	....	...	....	25
Ophir, Nev.	....	.....	...	....	...	....	...	....	...	....	...	....	.....
Plutus, Colo.	.91	.....	.92	....	.90	....	...	....	...	....	...	....	1,100
Plymouth, Cal.	....	.....	...	....	...	....	...	....	10.38	10 25	...	....	3 9
Quicksilver Pref., Cal	38.75	.....	...	....	...	....	...	....	...	...	38.75	39 00	500
" Com., Cal	...	.....	...	....	...	....	...	....	...	...	6 75	6.13	50
Robinson Cons. Colo.	.....	.....	...	....	...	....	.44	....	.45	.44	...	....	1,300
Savage, Nev.	....	.....	...	....	...	....	...	....	1 95	.44	...	....	300
Sierra Nevada, Nev.	....	.....	...	....	...	....	2 45	....	...	....	...	....	400
Silver King, Ariz.	...	.....	...	....	.75	.70	...	....	...	....	.75	.70	86
Silver Mg. of L. V.	....	.....	...	....	...	....	...	....	.35	....	...	....	500
Small Hopes, Colo.	....	.....	...	....	...	....	...	....	...	....	...	....	.....
Standard, Cal	...	.....	...	....	...	....	...	....	...	....	...	....	.....
Stormont, Utah	..	.....	...	....	...	....	...	....	...	....	...	....	.....
Yellow Jacket	...	.....	...	....	...	....	...	....	...	....	...	....	.....

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	June 8.		June 10.		June 11.		June 12.		June 13.		June 14.		SALE
	H.	L.	H.	L.	H.	L.	H	L.	H.	L.	H.	L.	
Alta, Nev	1.60	...	....	.....	....	....	1.50	..	....	....	....	.....	300
Amador, Cal.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
American Flag, Colo	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Astoria, Cal.	.20	...	.20	....	.20	....	.20	....	.20	....	.20	....	1,800
Barcelona, Nev.	.55	...	...	....	.60	....	...	....	.60	....	...	....	800
Bechtel Con., Cal.	...	..	...	....	...	....	.07	....	...	....	...	....	500
Brunswick, Cal.	....	...	.05	....	...	....	...	....	...	....	...	....	200
Buffalo Iron Min'g.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Bullion, Nev.	1.65	...	1.10	....	...	....	...	....	....	....	....	.....	40
Cashier, Colo	.04	...	.04	....	.05	.04	....	....	....	....	....	.....	1,90
Castle Creek, Id.	...	...	...	....	...	....	...	....	....	....	....	.....	.....
Central Ariz., Ariz.	.05	....	.06	....	...	....	.07	....	....	....	....	.....	2,80
Colchis, N.	....	...	....	.....	....	....	...	....	....	....	....	.....	200
Commonw'th, Nev.	...	...	....	.....	....	....	...	....	....	....	4.70	....	200
Con. Imperial, Nev	...	...	....	.....	....	....	...	....	....	....	...	....	.....
Con. Pacific	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Denver City, Colo.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Del Monte, Nev.	....	...	....	.....	....	....	1.25	..	....	....	....	.....	100
Eastern Oregon	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
El Cristo, U. S. Col.	....	.....	1.60	....	....	....	...	....	....	....	....	.....	300
Excelsior, Cal	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Exchequer Nev.	1.10	...	1.15	....	....	....	...	....	....	....	....	.....	300
Hector, Cal	....	...	....	.....	.15	....	...	....	....	....	....	.....	100
Julia, Nev.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Kingst'n & Pemb'ke	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Kossuth, Nev.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Lacrosse, Colo	.09	..	.09	....	09	....	09	..	.09	....	.09	....	15,900
Lee Basin, Colo.	...	...	....	.....	....	....	...	....	....	....	....	.....	.....
Mexican, Nev.	3.60	...	....	.....	3 40	....	3.35	3.25	....	....	....	.....	550
Middle Bar, Cal.	.29	...	.30	....	.30	....	.30	....	.30	....	.30	....	2,400
Moniter, Colo.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Mutual Sm. & M. Co	....	...	1 45	....	1.45	....	1.45	....	1.45	....	1 45	....	1,500
Nevada Queen, Nev.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
N. Com'nw'th, Nev.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Oriental & Mil. Nev	....	...	.05	....	....	....	...	....	....	....	....	.....	300
Phœnix of Ariz.	.40	.30	.43	.38	.42	.40	.41	.38	.40	....	....	.....	9,400
Potosi, Nev.	2.45	...	....	.....	....	....	1.95	....	2.00	....	2.00	....	525
Rappahann'k, Va	.07	....	.07	.	. 7	...	.07	....	.07	....	.07	....	6,000
S. Sebastian, San S	...	.....	...	....	...	....	...	....	...	....	.20	....	100
Scorpion, Ariz.	.65	...	.7	....	...	....	...	....	...	....	...	....	600
Shoshone, Idaho	.07	...	....	.....	08	....	08	....	.07	....	...	....	2,600
Silver Cliff, Colo.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Silver Cord, Colo.	....	...	....	.....	.60	....	...	....	....	....	....	.....	1,000
Silver Hill, Nev	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Silver Queen	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
State Line, 2&3, Nev.	...	...	....	.....	....	....	...	....	....	....	....	.....	.....
Sullivan Con	1.25	...	1.25	....	1.25	....	1.25	..	1.10	1.00	....	..	800
Sutro Tunnel, Nev.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
" Trust Cert.	....	...	....	.....	.83	....	...	....	....	....	....	.....	1,500
Tornado, Nev.	....	...	....	.....	....	....	...	....	....	....	....	.....	.....
Union Cons., Nev.	...	...	....	.....	....	....	3.15	....	....	....	3.00	....	500
United Copper	..	...	1 15	....	1.10	..	1 20	....	1 15	....	1 10	....	1,150
Utah, Nev	1.25	...	....	.....	....	....	1 25	..	1.10	....	1.05	..	670

*Ex dividend. †Dealt in at the New York Stock Ex. Unlisted securities. ‡Assessment unpaid. Dividend shares sold, 15,425. Non-dividend shares sold, 52,895. Total New York, 68,320

BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	June 7.	June 8.	June 10.	June 11.	June 12.	June 13.	SALES.
Atlantic, Mich.	9.50	.....	.....	.....	.....	9.50	55
Bodie, Cal.	...	.....	.....	.....	.....	.....	.....
Bonanza Developm't	.80	.85	.85	.....	.....	.....	500
Bost. & Mont., Copper	38.25	36.75	37.00	36 00	37.0	36 00	37.25	37.00	38.63	37.75	39.00	38.50	2,856
Breece, Colo.	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet & Hecla.	218	216	217	..	217	....	207	....	216	213	218	213	875
Catalpa, Colo.	..	..	.....	.....	.....	.....	...	....	.15	.14	.12½	.....	1,300
Central, Mich.	....	.....	.....	.....	.....	.....	...	....	.....	.....	.....	.....	.....
Chrysolite, Colo	....	.....	.....	.....	.....	.....	...	....	.....	.....	.....	.....	.....
Con. Cal. & Va., Nev.	....	.....	.....	.....	.....	.....	...	....	.....	.....	.....	.....	.....
Dunkin, Colo.	....	.....	1.15	.....	1.15	.....	1.10	1.00	1.00	.. ..	1.00	.....	1,300
Enterprise	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin, Mich.	1.00	. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Hale & Norcross, Nev.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Honorine, Utah	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Chief, Colo.	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Pittsburg, Colo.	... ..	.....	.....	... ..	.....	.....	.....	.....	.....	.....	.....	.....	.....
Martin White, Nev.	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mono, Cal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napa, Cal.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario.	....	.....	.....	.....	.....	.....	34.38	.. ..	.....	.....	.....	.....	25
Osceola, Mich.	9.50	.....	.....	.....	.....	.....	9.50	.....	9. 0	.....	9.50	.....	84
Pewabic, Mich.	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy, Mich.	52.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15
Ridge, Mich.	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nev., Nev.	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver King, Ariz.	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard, Cal	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack, Mich.	106	105½	105¾	105½	105¾	105½	105¾	105½	107	....	102½	.....	155

NAME OF COMPANY	June 7.	June 8	June 10.	June 11	June 12.	June 13.	SALES
Alloues, Mich.	..	.....	...	....	.....	.....	.....
Arnold, Mich.	....	.....	...	....	.....	.....	.....
Aztec, Mich.	..	.....	...	....	.....	.....	.....
Brunswick, Cal.	..	.. ..	...	....	.....	.....	.....
Butte & Boston	....	.....	...	....	.....	.....	.....
Canada	....	.....	...	....	.....	.....	.....
Cashier, Colo.	....	.....	...	....	.....	.....	.....
Crescent, Colo.	....	.....	...	....	.....	.....	.....
Cusi, N. Mex.	....	.....	...	....	.....	.....	.....
Denver City, Colo.	...	.....	...	....	.....	.....	.....
El Cristo, W. S. C.	.....	.....	...	....	.....	.....	.....
Everett	...	.....	...	....	.....	.....	.....
Hanover, Mich.	....	.....	...	....	.....	.....	.....
Humboldt, Mich.	....	.....	...	....	.....	.....	.....
Hungarian	....	.....	...	....	.....	.....	.....
Huron, Mich.	....	.....	...	....	.....	1 25	250
Kearsarge, Mich.	5.50	.....	...	....	.....	.....	100
Mesnard, Mich.	....	.....	...	....	.....	.....	.....
National, Mich.	....	.....	...	....	.....	.....	.....
Native, Mich.	....	.....	...	....	.....	.....	.....
Pontiac.	....	.....	...	....	.....	.....	.....
Rappahannock, Va	....	.....	...	....	.....	.....	.....
Rockland	....	.....	...	....	.....	.....	.....
Santa Fe, N. Mex.	.70	.... ..	.80	.67½	.80	.67½	72½	.70	.70	.....	.72½	.....	3,940
Security, Colo	....	.....	...	....	.....	.....	.....
Shoshone, Idaho	....	.....	...	....	.....	.....	.....
South Side, Mich.	....	.....	...	....	.....	.....	.....
St. Louis Cop.	....	.....	...	....	.....	.....	.....
Sullivan, Dak.	....	.....	...	....	.....	.....	.....

Boston: Dividend shares sold, 6,716. Non-dividend shares sold, 4,290. Total Boston, 11,006.

COAL STOCKS.

NAME OF COMPANY.	Par val. of sh'rs.	June 8.		June 10.		June 11.		June 12.		June 13.		June 14.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
American Coal.	.....	.....		.....		.....		.....		.....		.....		.....
Cambria Iron.	.....	93	.....	92	.....	.....		.....		.....		.....		374
Cameron Coal & Iron Co	...	...	...	31	.....	31¾	31	32½	.....	32⅞	32⅝	32¾	32⅝	2,601
Ches. & O. RR.	100	.....		.....		.....		.....		.....		.....		.....
Chic. & Ind. Coal RR.	100	.....		.....		.....		.....		.....		.....		.....
Do. pref.	100	.....		.....		.....		.....		.....		.....		.....
Col. & Hocking Coal	100	.....		.....		.....		.....		.....		.....		.....
Col., C. & I	100	26	.....	26½	.....	28¾	27	28½	.....	28½	28⅝	29	28½	1,825
Consol. Coal	100	.....		.....		.....		.....		.....		.....		.....
Del. & H. C.	100	143¼	142⅝	144½	143	147½	144	148⅝	147	147½	146½	147¼	146	7,966
D., L. & W. RR.	50	144¼	143¾	144½	143⅝	146⅝	144⅝	146¾	146⅜	146½	145¾	146⅜	145⅝	104,765
Hocking Valley	100	14⅞	14⅛	14¾		15	14¼	16	14¼	15⅛		15⅛		2,099
Hunt. & Broad Top	.....	.....		.....		.....		.....		.....		.....		.....
Do. pref.	.....	46¾		.....		.....		46¾		47⅜		.....		360
Lehigh C. & N.	50	.....	.....	51½	.... .	51⅝	51¼	53⅛	52	55	54	.....	.....	17,654
Lehigh & W. B. Coal	.....	.....		29		.....		.....		.....		.....		200
Lehigh Valley RR.	50	53¾	.....	53⅞	53¾	53⅞	.....	53⅜	53⅛	53½	53⅜	.....	.....	2,209
Marshall Con. Coal	100	.....		.....		.....		.....		.....		.....		.....
Mahoning Coal	.....	.....		.....		.....		.....		.....		.....		.....
Maryland Coal	100	.....		.....		.....		.....		.....		.....		.....
Morris & Essex	100	155½		.....		.....	151¾	.....		.....		.....		210
New Central Coal	100	.....		.....		.....		.....		.....		.....		.....
N. J. C. RR.	50	105¾	105½	108½	105¼	112	.....	108¼	114	111⅝	112	111	110½	109¾	25,345
N. Y. & S. Coal	100	.....		.....		.....		.....		.....		.....		.....
N. Y., Susq. & Western	100	8⅞	8¼	.....		.....		9⅜	8⅞	9⅛	9¼	9⅜	9⅛	9	.....	3,435
Do. pref.	100	33½		.....		.....		35⅛	33½	35¼	35	35½	34¾	34¾	34	8,570
N. Y. & Perry C. & I.	100	.....		.....		.....		.....		.....		.....		.....		.....
Norfolk & Western R.R.	100	.....		.....		.....		.....		.....		16½	16¼	.....		225
Do. pref.	50	.....		.....		.....		.....		.....		.....		52⅞	52	200
Penn. Coal.	50	.....		.....		.....		.....		.....		.....		.....		.....
Penn. RR.	50	52	51⅛	51¾	51¼	51⅛	51⅛	51⅝	51	51⅜	51	.....		16,080
Ph. & R. RR.**	50	46	45⅝	46⅛	45⅝	47⅝	46¼	48¾	47⅛	48⅝	47¾	48	47⅛	249,281
Sunday Creek Coal.	.....	.....		.....		.....		.....		.....		.....		.....		.....
Do. pref.	.....	.....		.....		.....		.....		.....		.....		.....		.....
Tennessee C. & I. Co.	100	39¼	38¾	39¾	39	39¾	39¼	40⅝	39¼	40¼	39⅜	39¾	39⅛	13,733
Do. pref.	.....	100	.....	102½	..	.....		103½	101	103½	...	.....	.....	692
Westmoreland Coal.	100	.....		.....		.....		.....		.....		.....		.....
Wyoming Valley Coal.	.....	.....		.....		.....		.....		.....		.....		.....

**Of the sales of this stock, 45,951 were in Philadelphia, and 203,330 in New York. Total sales, 458,804.

San Francisco Mining Stock Quotations.

COMPANY.	CLOSING QUOTATIONS. June 7.	June 8.	June 10.	June 11.	June 12.	June 13.
Alpha	.....	.....	.....	.....	.....	.....
Alta	1.50	1.45	1.40	1.40	.....	1.35
Belcher	.....	.....	.....	.....	.....	.....
Belle Isle	.....	.....	.....	.25	.....	.20
Best & Bel.	3.55	3.45	3.40	3. 5	3.15	3.05
Bodie	1.50	1.45	1.45	1.25	1.25	1 30
Bulwer	.40	.35	.35	.30	.30	.....
Challar	2.10	1.95	1.90	1.85	.95	1.85
C'm'weal'h	4.10	.....	.....	4.40	.....	.....
Con. C. & V	7.88	7.63	7.63	7.13	7.25	7.25
Con. Pac.	.....	.....	.....	.....	.....	.....
Crown Pt.	3.50	3 25	.....	2.90	3.00	2.85
Eureka C.	.....	.....	3.20	2.50	.....	1.60
Gould & C.	2.50	2.45	2.40	2.25	2.25	2.20
Grd. Prize.	.....	.....	.....	.....	.....	.....
Hale & N.	3.85	3.80	3.75	3.60	3.65	3.55
M. White	.....	.....	.....	.....	.....	.....
Mexican	3.55	3 50	3.40	3.10	3.35	3.05
Mono	1.30	1.20	1.20	1 05	1.20	1.05
Mt. Diablo	2.55	.....	.....	.....	.....	.....
Navajo	.50	.....	.....	.....	.....	.....
Nev. Queen	1.05	.95	.95	1.00	.90	1.00
N. Belle I	1.10	.....	1.10	.....	1.05	1.10
Occidental	1.55	.....	.....	1.45	1.45	.....
Ophir	4.60	4 35	4.40	4.50	4.65	4.40
Potosi	2.30	2.00	2.00	1.85	1.95	1.85
Savage	2.30	2 25	2.15	2.15	2.10	2 05
Sierra Nev	2.60	2.50	2 45	2.25	2.35	2.20
Union Con.	3.40	3.15	3.15	2.80	3.00	3.00
Utah	1.10	1 00	1 00	1.20	1.00	.95
Yellow Jkt.	.....	3.45	3.40	3.15	3.45	3.15

same to arrive. Thirds are quoted at $19 spot and $18 to arrive. No offerings of thirds on the spot have been heard of.

Nitrate of soda is still weak but prices temporarily, at least, seem to be steadier. On the spot, 1·95c. is asked. Sales of 2,500 bags are reported. The spot supply, according to one estimate, which we are not prepared to indorse, is now 60,000 bags.

The following late arrivals are reported:

Ammonia, crude, 1527 bags, SS. Persian Monarch, London.

Bleaching powder, 168 casks, 224,316 pounds, SS. St Ronans, Liverpool.

Brimstone, 5 casks, 17,228 cwt., SS. Persian Monarch, London.

Brimstone, 850 tons, SS. Victoria.

Nitrate of soda, 5 casks, 2972 lbs., SS. Liverpool.

Potash, chlorate, 100 kegs, 11,200 lbs., SS. St. Ronans, Liverpool.

Soda, caustic, 50 drums, 31,606, SS. Servia, Liverpool.

Soda, ash, 1206,716 lbs., SS. St. Ronans, Liverpool.

Soda ash, 228,870 lbs., SS. Alaska, Liverpool.

Soda ash, 264,450 pounds, SS. Servia, Liverpool.

Soda ash, 999,210 pounds, SS. Servia, Liverpool.

Soda ash crystals, 500 kegs, 112,000 pounds, SS. Servia, Liverpool.

Soda ash sal, 140 barrels, 500 cwt., SS. Servia, Liverpool.

BUILDING MATERIAL MARKET.

NEW YORK, Friday Evening, June 14.

The published statistics of buildings projected in New York City show that during May, 1889, plans were filed for 411 buildings, as compared with 361 during May, 1888. This makes the total number projected to June 1st, 1889, 1790 buildings, against 1365 during the corresponding period last year. The estimated aggregate cost of the same was $33 290,105 in 1889, and $20,673,560 in 1888. From a purely statistical point of view, therefore, it is evident that the situation is encouraging to sellers of building material, but in reality the activity in building circles is hardly as great as was expected. It is becoming apparent that on many of the plans filed which contribute to the excellent statistical showing, no work has yet been done. Builders say they are not able to dispose of the buildings already erected, and so long as their money is thus locked up it is impossible for them to engage in any new ventures. Moreover, it is claimed that capital, if not reluctant to make loans on improved realty, is at least unusually exacting in foreclosing, and builders are therefore in a disadvantageous position. Still another reason is advanced. As last winter was so unusually open, it is said that much work was done then which ordinarily would have been executed now.

Bricks.—Without an open agreement, but from a general realization of the fact that a restriction of shipments was absolutely necessary if values were to be maintained, the Hudson River brick makers have decreased the number of barges sent forward, and, consequently, the supply and demand this week have been more evenly balanced. A slight stiffening of prices has ensued, amounting to about fifty cents per M. more than was asked last Friday. We get quotations ranging from $5 50 to $6 for Haverstraws; $5 @$5.50 for Uprivers; $4@$4.25 for Jerseys, and $3@ $3.50 for pales. The demand has somewhat improved and prices appear to have touched bottom, temporarily at least. A conservative policy in the matter of shipments by the makers is what is now needed.

Lime.—The spot market is now very nearly bare. Rockland agents expect additional supplies next week. Quotations remain at the Association figures.

We learn of the arrival of 2060 barrels on the "L. F. Whitmore," from St. John's, N. B.

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Continued on page xiii.

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